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CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT.

THE FIRST VICTOR HORSLEY MEMORIAL LECTURE on the Relations of Surgery and Physiology. By Sir EDWARD SHARPEY SCHAFER, F.R.S. 915

ORIGINAL ARTICLES.

Encephalitis Lethargica: Some Observations on a Recent Outbreak. By C. O. STALLYBRASS, M.D., D.P.H.—(*Illustrated*) .. 922

Two Cases of Unilateral Œdema with Albuminuria. By JAMES W. RUSSELL, M.D., F.R.C.P.—(*Illustrated*) 925

A Case of Cortical Necrosis of the Kidney with Polyarteritis Acuta Nodosa. By E. WORDLEY, *M.C.*, M.B., B.Ch., M.R.C.P.—(*Illustrated*) 927

Two Cases of Brain Abscess, with Remarks on the Cytology of the Cerebro-Spinal Fluid. By GEOFFREY HADFIELD, M.D. 929

CLINICAL AND LABORATORY NOTES.

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Section of Dermatology: Results of Treatment of Syphilis of the Nervous System 932

Medical Society of London: Exhibition of Cases and Specimens 934

REVIEWS AND NOTICES OF BOOKS.

The Heart in Modern Practice. Diagnosis and Treatment. By William Duncan Reid, A.B., M.D. 936

A Dictionary of Treatment. By Sir William Whitla, M.D., D.Sc., LL.D., M.P. 936

Klinische Laboratoriumstechnik. Von Prof. Theodor Brugsch und Prof. A. Schittenhelm.. 936

High-Frequency Practice. By Burton Baker Grover, M.D. 936

Obstetric Tables. By Maurice G. Anderson, L.R.C.P. 937

Puerperal Fever and its Prophylaxis. By Eustace Thorp, O.B.E., L.R.C.S., L.R.C.P., D.P.H. 937

Un Hôpital Militaire à Paris Pendant la Guerre: Villemin, 1914–1919. Par F. Lejars 937

Text-book on the Artistic Anatomy of the Human Form. By U. W. A. Parkes 937

Gray's Anatomy. Edited by Robert Howden 938

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Radio-activity. By Kasimir Fajans. Translated by T. S. Wheeler, B.Sc., A.R.C.Sc.I., A.I.C., and W. G. King 938

LEADING ARTICLES.

THE PRINCIPLE OF THE THING 939

PHYSIOLOGY AND SURGERY 940

PUBLIC HEALTH IN LOCAL LEGISLATION 940

ANNOTATIONS.

Harveian Celebrations at the Royal College of Physicians of London .. 941

Stricture of the Œsophagus Following Typhoid Fever 941

The Blood Pressure in Scarlet Fever 941

Bilharziasis in the Dongola Province of the Sudan.. 942

Scientific Instruments 942

The Board of Control for Scotland 942

Active and Passive Immunisation in Tuberculosis 943

A Curious Condition of the Semilunar Carpal Bone. 943

Etcher and Surgeon 944

Pregnancy and Tuberculosis 944

A Proposal for Devolution 945

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XLII.—The Treatment of the Neurotic. By S. A. KINNIER WILSON, M.D., B.Sc., F.R.C.P. 945

SPECIAL ARTICLES.

The Panel Conference: Capitation Fee and Approved Society Control: Remuneration and Approved Society Control.—Terms of Service, 1924 Agreement.—Organisation 947

The Panel Crisis: The Situation in the Manchester District 951

Scotland: Cameron Prize Lecture: The Story of Insulin 952

PUBLIC HEALTH SERVICES.

Reports of Medical Officers of Health: Sheffield.—York.—Lincoln..... 953

CORRESPONDENCE

Centenary of THE LANCET (Dr. Russell V. Steele).. 955

Wardrop's Operation (Dr. T. Wardrop Griffith)... 955

"Defatted" Tubercle Antigens (Dr. C. Y. Wang) 955

The Relation of Gastric Ulcer to Carcinoma (Mr. John Morley) 955

X Ray Diagnosis of Pregnancy: Its Medico-Legal Aspect (Dr. T. I. Candy) 955

The Panel Crisis and the Royal Colleges (Dr. Lewis G. Glover)..... 956

The Lister Ward in Glasgow Infirmary (Dr. Andrew Freeland Fergus) 956

The United Hospitals Winter Sports Club (Dr. J. Duncan Lyle)..... 956

A Warning (Dr. M. J. Horgan) 962

Non-Registrable Medical Degrees on Panel Lists (Dr. Arthur Haydon)... 962

NEW INVENTIONS.

Improved Anæsthetic Apparatus (Dr. R. J. Clausen)—(*Illustrated*) .. 938

THE SERVICES.

Royal Naval Medical Service.—Royal Army Medical Corps.—Royal Air Force 956

OBITUARY.

Harry Michie, M.B., C.M.. 957

The late Sir William Rice Edwards 957

MEDICAL NEWS.

University of Cambridge.. 957

University of Oxford: Hospital Scholarships 957

University of London: A Gift for Otology 957

Roy. Coll. Surg. Eng..... 957

Roy. Coll. Surg. Edin..... 957

Roy. Coll. Phys. Edin., Roy. Coll. Surg. Edin., and Roy. Fac. Phys. and Surg. Glasg..... 958

Roy. Coll. Phys. Irel. 958

Donations and Bequests.. 928

University of Manchester . 935

Elsie Inglis Memorial..... 951

West Riding Association of Graduates of the University of Edinburgh..... 953

Edinburgh University Club of London 958

Fellowship of Medicine and Post-Graduate Medical Association..... 958

Royal College of Physicians of London 958

North-Western Tuberculosis Society 958

London Hospital Medical College 958

Society of M.O.H. 958

British Dentists' Hospital. 959

Small-pox in England and Wales 959

Institute of Hygiene 959

Chadwick Public Lectures. 959

Manchester Local Voluntary Hospitals Committee..... 959

Presentation to a Medical Man..... 960

NOTES, COMMENTS, AND ABSTRACTS.

The Position of the National Insurance Committees. By Sir WILLIAM GLYN-JONES 961

The Silent Milk-Can..... 962

Madeira, the Canary Islands, and the Azores. 962

The "Prana" Carbon-Dioxide Snow Apparatus 962

Medical Diary 959

Appointments 960

Vacancies..... 960

Births, Marriages, Deaths 960

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BY SIR EDWARD SHARPEY SCHAFER, F.R.S.,
PROFESSOR OF PHYSIOLOGY, UNIVERSITY OF EDINBURGH.

I HAVE felt it a peculiar honour to have been asked to give the first Victor Horsley memorial lecture. I had the less hesitation in acceding to the request that I should do so because I am not only his oldest surviving scientific friend, but also his first fellow-worker. It is nearly half a century since he made his appearance as an eager, intelligent student in the old Physiological Laboratory at University College. Sharpey had but recently retired from the teaching of physiology, although his personal influence was still felt. His place had been taken by Burdon-Sanderson, whose dominant idea was to make the work of the subject as experimental as possible. And anyone who has known Victor Horsley will readily understand with what keen interest this idea would inspire him. There can indeed be no doubt it was this training in experimental physiology which determined Horsley's future career both as a physiologist and as a scientific surgeon. And it is this double career which may appropriately be chosen as an example of the mutually beneficial influence of surgery and physiology.

I had almost been tempted by our long and intimate friendship, which began so auspiciously at University College in 1875 and lasted until the day of his death in Mesopotamia in 1916, to dwell, on this the first opportunity of commemorating his career, upon the personal traits which were so striking a feature of Horsley's character—his enthusiasm, his love of truth and hatred of hypocrisy, his energetic striving for everything he judged to be right and inflexible antagonism to everything he thought wrong. But has not all that been done, far better than I or anyone else could hope to do it, in the history which Mr. Stephen Paget has set forth, in that inimitable style which characterises all his writings? It is fortunate that the life of Victor Horsley was entrusted to such a biographer, nor was the biographer less fortunate in having such a subject! How splendidly he has taken advantage of his opportunity we all of us know.

INTERDEPENDENCE OF SURGERY AND PHYSIOLOGY.

I have chosen the "Relations of Physiology and Surgery" as the text upon which to base the remarks I have to make to-day. It is my object to show that these subjects are mutually dependent: that physiology must call in the aid of surgery to solve many of its most intricate problems, and that surgery cannot make any real advance unless it proceeds hand-in-hand with physiology. It was not Horsley himself who established this principle, but he happened upon the time when it was beginning to be evident. Only a few years before it might have been admitted that there was a certain amount of interdependence between medicine and physiology, but no one would have thought of connecting surgery with anything but anatomy. That experiments on animals were necessary in order to elucidate the functions of the body had indeed been conceded. It was recognised from Harvey onwards—yes, and long before Harvey—that no true advance could be made in physiology without such experiments. The operations involved in them have somewhat unfortunately received the designation of "vivisection," and this title has caused many who are ignorant of their nature to regard them as of an entirely different character from surgical operations in the human subject—although they are conducted in exactly the same manner as in man, with the same precautions to prevent unnecessary pain and with every effort to avoid unsatisfactory complications which might result from wound-infection and the like. But many of the older surgeons refused to believe that an operation on the lower animals could be utilised to obtain information which would be useful to them in the performance of similar operations in man, nor should I be surprised to hear that there are some who still hold this view. It is fortunate for the world that Victor Horsley was not one of these.

As I have remarked, he happened upon a time when the importance of animal experimentation as a guide to surgery was beginning to be recognised. There were two directions in which this tendency was particularly apparent. One of these involved the investigation of the functions of the brain, the other of what we now term endocrine organs—the uses of which were then for the most part obscure. And it was just these two subjects which attracted the attention of the physiologically trained but hitherto unknown young surgeon whose work was to throw so much light upon these dark places of the organism, places which hardly anyone had hitherto ventured to approach. It is on this account that I propose to deal first with these particular aspects of the question of the relations of surgery and physiology. I will begin with the subject of the functions of the brain and its related subject, cranial surgery.

CRANIAL SURGERY AND THE FUNCTIONS OF THE BRAIN.

Not very long before the entry of Victor Horsley to University College as a medical student, a young Scottish physician named David Ferrier published an elaborate series of researches on the results of electric stimulation of the cerebral cortex in animals. Some of these were confirmatory of experiments performed on the dog and cat by Fritsch and Hitzig, although the method of stimulation employed by Ferrier was a vast improvement on that used by the German observers. But what rendered Ferrier's results really important was the fact that he extended these researches to the brains of monkeys, which are entirely different in the conformation of the cerebral cortex from the brains of the dog and cat, but present a remarkable resemblance to the brain of the highest member of the order Primates, man. It is scarcely necessary to say that the brilliant experiments of Ferrier aroused universal interest. I shall myself never forget the impression made upon me by one such experiment which Ferrier showed to Burdon-Sanderson and the rest of us who were working in his laboratory. The confident way in which he could predict what would be the movement resulting from touching this or that portion of the cortex with the electrodes was calculated to arouse our wonder and admiration; and the demonstration always provokes the same feelings in every audience of students when the experiment is repeated before them. It was these experiments—supplemented as they have since been by those of Horsley and Beevor on the brain of the orang, and by the yet more recent and accurate results obtained by Sherrington and Grünbaum upon the orang, chimpanzee and gorilla—which have enabled the surgeon to locate the seat of an injury and tumour in the human brain, and to remove the tumour or to deal with the source of injury with advantage to the patient.

In all researches in experimental physiology, there are two chief methods employed to elucidate the functions of an organ. One is the artificial stimulation of the organ, causing it to pass into a condition of activity, the effect of such activity being duly noted. The other is the production of an injury in the organ, or its complete removal, the effect, if any, which results from such injury or removal being observed. With regard to the functions of the brain, this last aspect of the subject had by no means been neglected by

antecedent workers, but discrepant results had been obtained. Indeed, up to the time of which I am speaking—i.e., the epoch of Fritsch and Hitzig and of Ferrier—physiologists were disposed to agree with Flourens that the whole cortex acts as one undivided organ and that the several parts of the body are not individually represented in it; in other words, that there is no such thing as localisation of functions in the cerebrum. One acute clinical observer, Hughlings Jackson, had, it is true, pointed out that the phenomena of traumatic epilepsy seem undoubtedly to indicate the existence of some kind of localisation in the cortex; since the "march" of the movements which result from the excitation producing the epileptic fit is different according to the seat of injury. But such a complete localisation as we now know to exist was unsuspected, and it was largely on this account that so much interest was aroused by the excitation experiments of Ferrier.

But if excitation of a particular area of the cerebral cortex provokes certain movements, it does not follow that we are to regard that area as representing a nerve centre for governing or producing those movements unless removal of the area is followed by paralysis of the movements. We may leave out of present consideration whether the so-called centre is automatic—i.e., works spontaneously—or whether it only represents the point of arrival of sensory impulses and the point of departure of the corresponding impulses to motor centres in the lower part of the central nervous system—i.e., whether it is a reflex centre. For this question, which was warmly debated at one time, may now be considered to be definitely settled in favour of the second hypothesis. In either case the final result of excitation and of ablation will be in the first case production of definite movements, in the second the inability to perform them.

At the period I am speaking of, many of the facts had been established, but the explanation was a matter of controversy. There were, moreover, still certain parts of the hemisphere which Ferrier had not explored, or which in his hands had yielded negative replies. And the results of the extirpations which he had performed in conjunction with his colleague Gerald Yeo, then professor of physiology in King's College, were not altogether satisfactory, nor did they agree in certain particulars with the work of others, especially that of Herman Munk, of Berlin, who was working on much the same lines both in the dog and monkey.

RESULTS OF REMOVAL OF DEFINITE AREAS OF THE CORTEX.

This, then, was a problem still needing elucidation, and when in 1883 I succeeded Burdon-Sanderson in the Chair of Physiology at University College, it was one of the first investigations at which I resolved to work; especially with the view of determining more exactly the results of removal of definite areas of the cortex. Now Ferrier and Yeo's work—I am referring only to their earlier work, the later was accomplished under different conditions—had been done by pre-Listerian methods, and I felt convinced that this might be the source of some of the discrepancies exhibited, as compared with the results of Munk and others. My own surgical training was unfortunately pre-Listerian owing to the slow progress which was made in London in the adoption of Lister's methods, and the active opposition with which they were met by many of the leading London surgeons. I therefore recognised the necessity of securing as a collaborator a young and skilful surgeon thoroughly imbued with Listerian ideas, and enthusiastically interested in physiology. You may easily understand that I had no difficulty in making my selection, for Victor Horsley fulfilled all these conditions, and we were already on terms of personal intimacy. Gleefully did he accept the proposition that we should carry out this work together, and many were the hours which we devoted to it.

In every case the first part of an experiment consisted in exploring by induction currents after the manner of Ferrier the particular area we desired to investigate, and the second part in removing the explored area, re-covering the brain, and sewing up the wound. In these operations we made use of every Listerian practice, including, to our woeful discomfort, the recently introduced carbolic spray—a source of endless objurgations!

To these operations Horsley brought a remarkable amount of surgical skill. Our quadrumanous patients were kept under the best possible conditions, and in most cases made speedy recoveries. It is not saying too much if I add that Horsley obtained from these experiments a surgical experience of a unique kind. This experience he was presently—in his capacity of surgeon to the great hospital in Queen-square—to apply to the alleviation of human suffering in a domain which even the boldest surgeons had not ventured seriously to attack.

There is no better illustration of the mutual benefit which results when surgery and physiology go hand in hand than the history of our early efforts in this field of investigation. The benefit to Horsley I have pointed out. And for myself, I acknowledge with gratitude the debt I owe to my colleague for the opportunity I was afforded of learning the application of Listerian surgery to animal experimentation, a lesson the benefit of which I am more than ever conscious of after nearly 40 years' experience, much as things have changed both in physiology and in surgery since that far-off but never-to-be-forgotten time.

Our partnership was a fruitful one. We were able to extend Ferrier's observations in the monkey's brain to parts which he had not explored, although in this particular he had not left much for future investigation. But the young worker may take it from me who have grown old and experienced in scientific investigation, that if he wishes to discover new things he will do well to repeat with the aid of modern methods any experiment which has been long accepted as affording the last and most incontrovertible word on the subject. Almost certainly he will find some point which has been overlooked by the original investigator, and needless to say by those who have merely aimed at getting the same results. And almost certainly the exception will prove—i.e., test—the rule, and he may easily find that which has been looked upon from time immemorial as scientific gospel is badly in need of re-editing. In my experience nothing is so fertile in discovery as going carefully with one's eyes open, and with the aid of new methods along a well-worn track. I say with one's eyes open—for if they are shut to everything but what one expects to see many a discovery will be overlooked.

It is not my purpose to give an account of our work on the brain—work which, begun together, was eventually by force of circumstances carried on independently or in conjunction with other workers. One word, however, I would say about a trait in my colleague which, although in no way unfavourable to his character, rendered the actual conduct of our joint investigation somewhat laborious. He was too energetic. He would think nothing of performing several operations at a sitting, and acquired so much skill at them that they occupied a relatively small amount of time. But the operation was one thing, the study of the symptoms quite another. Now it takes a long time to make a thorough investigation of symptoms in the human subject—although in this case the subject himself can give much assistance. But when it comes to making the same kind of investigation in animals, and especially in monkeys, which are often wild, and the attention of which it is always difficult to fix, an unconscionable amount of time has to be devoted every day to each case. It so happened that just about this time Horsley was leading an extremely busy life. He was surgical registrar at University College Hospital—a position involving a huge amount of clerical work—and later assistant surgeon there; professor superintendent of the Brown Animal Sanatory Institution; assistant professor of pathology in University College; had a considerable if not very remunerative private practice; and last but not least, was engaged to be

married. The result of all this was that most of the observations on the operated animals had to be made by his colleague, and when there were several to be examined the amount of time that these occupied every day rendered the duty severe. All the clinical notes thus taken day by day had to be collated and eventually boiled down—a process which involved many prolonged conjoint sessions. Upon the results of this collaboration I need not dwell. Are they not written in the Chronicles of the Royal Society and decently buried in the Philosophical Transactions? May they rest there in peace!

The experience which Horsley had gained in these experiments—commenced in the laboratory at University College, and continued at the Brown Institution—was invaluable to him in dealing with cranial surgery in man, and when the position of surgeon to the Hospital for Nervous Diseases in Queen-square fell vacant Horsley received the appointment. He lost no time in applying the knowledge he had acquired in the laboratory to the operating theatre in the hospital. Paget gives an interesting and humorous account of the first operation he performed there for a cranial tumour. It was upon a Scotsman, was in every way successful, and was witnessed by a distinguished company which included Hughlings Jackson and Ferrier. It was, of course, followed by many others, and these were often attended by eminent foreign surgeons, for Horsley's reputation as a cranial surgeon soon became widespread. The facility with which he used either hand contributed not a little to the dexterity of his operations, and he never under any circumstances lost the sang-froid which is essential to a surgeon.

THE THYRO-PARATHYROID APPARATUS.

Although by the work which Horsley had done upon the brains of monkeys and apes, he had become one of the most skilful and scientific operators upon that part of human anatomy, he was much too all-round a man to confine himself to a single object, and we must next follow his career in another subject—that, namely, dealing with the functions of the thyroid gland—to which he brought equally keen enthusiasm for physiological investigation, and skill in surgical procedure. Like that upon the functions of the brain this also has an interesting preliminary history.

The year before Victor Horsley was born, Moritz Schiff, of Geneva, one of the most active physiologists of the middle of the last century, had published the results of observations he had made upon animals, the thyroids of which he had extirpated. But at that time neither physiologists nor medical men were prepared to take much interest in the thyroid, nor indeed in any of the so-called ductless glands, which now, under another name, occupy so prominent a position both in physiology and in clinical medicine. Schiff's work, therefore, which was not without interest and importance, passed unnoticed, and the matter was allowed to rest for many years. But just about the time that Horsley was starting his surgical career, the subject of the thyroid and its functions had come into prominence on account of the fact that it was becoming the practice amongst surgeons in Switzerland—in which country tumours of the thyroid are common—to remove such tumours entirely when they were inconveniently large. In such cases of complete removal serious symptoms often resulted—symptoms which closely resembled those which had been described some ten years previously by Sir William Gull, as a cretinoid condition of adult life, and were later shown by Ord to be associated with absence or atrophy of the thyroid; Ord applied the term myxœdema to the syndrome. The symptoms resulting from thyroid removal were recognised by J. and A. Reverdin as resembling those of myxœdema, and they gave to them the name operative myxœdema. Th. Kocher, who described them at about the same time, spoke of the condition as *cachexia strumipriva* or *thyreopriva*, the name by which it is now generally known, although the term operative myxœdema best describes its cause and symptoms. These observations of the Swiss surgeons were published in 1883, and led immediately to a great revival of interest in the thyroid both amongst physicians and clinicians. Schiff himself repeated and extended his old experiments, and many other physiologists took up the subject, interest in which is indeed by no means exhausted even at the present day.

How Victor Horsley came to start experiments upon the thyroid is narrated by Paget:—

> "On Nov. 23rd, 1883, at a meeting of the Clinical Society of London, there was a discussion over a case of myxœdema shown by Dr. Drewitt; and Felix Semon called attention to Kocher's observations and said positively that cretinism, myxœdema, and cachexia strumipriva were closely allied conditions, having in common either absence or probably complete degeneration of the thyroid gland; and that they could hardly be attributed to any other cause. On Dec. 14th, the Clinical Society appointed a committee to investigate the whole subject. Ord was chairman, Hadden was honorary secretary, and Horsley was a member of the committee. It was of necessity that the investigation should include an experimental study of the healthy gland in healthy animals; . . . . and recognising 'the hitherto undreamt of importance of the thyroid gland' they asked Horsley to study it by the experimental method. They needed a physiologist and a surgeon, and they had them in him."

Horsley started this investigation in my laboratory at University College, working at first with Rickman Godlee, who was also a member of the committee. They made several experiments together upon monkeys; we had a room specially prepared and warmed for keeping these animals. But very soon the work was transferred to the Wandsworth-road, Horsley being now professor superintendent of the Brown Institution there, and he found it inconvenient to carry on work in both places. So he continued the investigation alone, and dealt with the results in the lectures which he was expected to give annually at the University of London, the first of these being published in the *British Medical Journal* in January, 1885, and the next in *The Lancet* in 1886. It is somewhat singular that with the exception of two short notes communicated to the Royal Society, he never took the trouble to send the results of these experiments upon the thyroid to any scientific periodical, although they were mentioned in his annual reports to the committee of the Brown Institution, and ultimately in the report of the Committee on Myxœdema, published in 1888. The reason for this silence on the part of an investigator like Horsley, who never in any other subject had the least hesitation in giving his results to the world whenever they were sufficiently definite, was, I imagine, because of a certain indefiniteness and variability in the effects obtained from removal of the gland. For some animals were simply rendered apathetic, with slow movements, a low body temperature, and a general deficiency in vitality; others showed acute nervous symptoms, with muscular tremors; which might pass into fits of greater or less violence, and terminate in death. Horsley himself seems to have thought that these were stages of the same condition. But we now know that the two kinds of symptoms were due to entirely different causes; in the one case the thyroid alone had been removed, and in the other the removal had included the parathyroids. Unfortunately, at the date of these experiments, the parathyroids, although they had been seen and described some years earlier, had not been recognised as organs having a specific function entirely different from that of the thyroid. It was only some years later (1891) that Ernest Gley, the eminent professor of physiology in the Collège de France, discovered this function, and showed that the symptoms of nerve excitation are entirely due to the removal of the parathyroids, and are not seen when these, or some of them, are left intact in removing the thyroid. On the other hand, removal of the thyroid alone without the parathyroids produces all the symptoms of cretinism and cachexia strumipriva.

The fact that when dealing with young animals the parathyroids, unless looked for, and they were at that time unknown, were more likely to be removed along with the thyroid (as age advances, some of them move farther away from the thyroid) accounts for the circumstance that Horsley found most of his young animals died in a few days with violent nervous symptoms. In consequence of this he missed the very important point that the thyroid exerts a remarkable influence on growth and nutrition, including the nutrition of nerve cells, which is indeed now established as one of its principal functions. But we cannot blame him for missing this point, since our knowledge of the thyro-parathyroid apparatus was not sufficiently advanced at the time.

THE PITUITARY BODY.

There is another important endocrine organ to which Horsley devoted a good deal of attention—viz., the pituitary body. He was, I believe, the first to endeavour to determine the effect of removal of this organ, for about 1886 he made one or two attempts to reach and destroy it through the pharynx and base of the skull. The conclusion he arrived at was that it is an organ which is not essential to life. Many years later he repeated these experiments and apparently saw no reason to alter his opinion, although in the meantime a number of other investigators who adopted other means of reaching the gland had come to an opposite conclusion. There is now no doubt that, in most adult animals at least, the loss of the pituitary body or even of its anterior lobe alone is incompatible with life, and had Horsley proceeded to attack the gland by the same (lateral) route as has been employed by most other investigators, a route in which every step of the operation is visible and perfect asepsis can be ensured, he would, I am sure, have obtained the same results. His original method offers many difficulties from the liability to hæmorrhage and sepsis, and from the impossibility of seeing what one is removing when working at the bottom of a deep and narrow hole. Horsley was inclined to regard the results obtained by those who operated by the lateral method as due to interference with the brain; but this could not be so, for exactly the same operation can be performed for exposure of the pituitary, but if it is left untouched no adverse symptoms follow. Moreover, one of my assistants, Mr. Norman Dott, himself a skilful surgeon, has recently devised a method of destroying the gland completely in the cat, by a process of electrolysis, without any exposure or any injury to the brain. The sella turcica is reached by passing a fine trocar, enclosing a carefully guarded needle, along the outer margin of the orbit, and through the sphenoidal fissure. This needle conveys the necessary current and the whole operation occupies only a minute or two. By careful adjustment of the position of the electrolysis needle it is possible to destroy either the anterior or posterior portion of the pituitary. If the anterior part is destroyed, the animal will inevitably die within two or three days, a result precisely similar to that obtained by Paulesco, Harvey Cushing, and others, when operating on adult dogs by the lateral method.[1]

Although Horsley had occasion to perform on the human subject a certain number of operations for removal of tumours of the pituitary, his physiological experience in connexion with this organ had not the same influence in determining the corresponding surgical proceedings in man as had the experiments upon the brain. This was partly owing to the fact that tumours of the pituitary are rare, and the methods for getting at the pituitary in the human subject are different from those employed for animals. Moreover, such tumours are often very slow growing, and are not attended with immediate risk of life; whereas complete removal of the gland is dangerous if not fatal. And with regard to tumours of the thyroid, they can often be successfully treated without operation, and only occasionally pass from the hands of the physician into those of the surgeon. But I have, I hope, said enough about the physiological and surgical work of Horsley to illustrate the subject of this address, the close relationship that should exist between physiology and surgery. Horsley himself laid particular stress upon this relationship. Mr. Paget tells us that when in January, 1911, the first Lannelongue prize—which was to be awarded once in five years to the surgeon who in the previous ten years shall have done most for the advancement of surgery—was presented to him:

> "He spoke a few words of thanks . . . . and said that his own country which had long been under the influence of John Hunter, had later come under the influence of Claude Bernard, who had joined together physiology and surgery. 'That is what I have striven to realise. Unfortunately, if surgical science advances with fair rapidity, its practice progresses slowly. That is because we are held in bondage by traditions from which we have difficulty in freeing ourselves.'"

Clearly he meant by this the supposed dependence of surgery on anatomy, when he himself clearly saw that it is physiology which it must in future depend upon, or only so far on anatomy as mechanical considerations may render necessary.

LISTER AND PHYSIOLOGY.

I next propose to give you an illustration of the mutual importance of surgery and physiology from the career of the most eminent surgeon of our generation, Joseph Lister. Lister was essentially and fundamentally a physiologist. He was easily the most distinguished pupil of William Sharpey, and William Sharpey was unrivalled as a teacher of physiology. This is the more strange, since Sharpey himself did little or no original work in the subject. Nevertheless, no one gave greater encouragement to his pupils to conduct physiological inquiries or more sympathy in their researches than did he. The failure on his part to carry out physiological investigations was due to his training. This was wholly anatomical. When he went to study in Germany it was Rudolphi's dissecting-room he frequented, not Johannes Müller's lecture room and laboratory. Had he attached himself to the last-named, he would have consorted with all the great German physiological workers of the middle of the last century—Helmholtz, du Bois-Reymond, Ludwig, Brücke; or had he gone to Magendie in Paris instead of to the anatomical and surgical schools there, he would have consorted with Claude Bernard, and would have become the outstanding physiological investigator in Great Britain and have occupied the place in London which Bernard occupied in Paris. But the tendency of the Edinburgh School in his day was wholly in the direction of anatomy, doubtless owing to the fact that the anatomical chair in Edinburgh had been occupied by a succession of pure anatomists—a tradition which has been handed down to the present day; whereas, although there existed a Chair of Physiology even prior to that of Anatomy, rightly known as the "Institutes of Medicine," it was never held by a physiologist until the appointment of Rutherford in 1884, of whom I am myself the unworthy successor. Whatever may be the case now—and we have illustrious examples to the contrary—anatomy in those days exercised an influence upon its devotees which was not favourable to active research and least of all to experimental work. It must further be remembered that Sharpey was actually a lecturer on anatomy in the extramural school of Edinburgh when he was invited to occupy the chair of general anatomy and physiology at University College. Up to that time he had not taught physiology, nor had he received any training in it; although he had interested himself in certain physiological problems, especially those connected with the growth of bone and the action of cilia. It was too late for him to undergo a fresh course of training, and he was busy with his new duties. He had, therefore, to get up his physiology as best he could. The Council of University College would have done well if they had given him a free year to study

[1] The details of this method will be published in the next number of the Quarterly Journal of Experimental Physiology.

physiology in France or Germany, but in those days there seemed to be no idea that anything of the kind was necessary; the governing bodies of universities rarely do the right thing in these matters! So Sharpey had to be content to teach a subject in which he was only self-trained. The more credit to him that he became so successful. For it is certainly due to his teaching, both directly and through his pupils, that the physiology of the latter part of the nineteenth century became preponderatingly an English science. I trust we still remain in the forefront, but we must admit that other nationalities have during the last five and twenty years made notable advances and are able to challenge any predominance we may have had.

If I have been led away by the reverence I have for his memory to speak at greater length of Sharpey than I had intended, I feel justified in doing so because of his intimate connexion with Lister. Lister, long before he was known as a surgeon, was an experimental physiologist, and he continued to be one throughout his career. He had had no opportunity of being trained in experimental work, but he was a born experimentalist and trained himself. Whether he would have done better to have worked with Claude Bernard in Paris or with Carl Ludwig in Leipzig must be a matter of opinion, but his self-training had at any rate the advantage of developing his originality. His first scientific investigations were made with the aid of the microscope—an instrument with which he had, through his father, the discoverer of the achromatic lens, been familiar from his earliest days. He was one of the first to demonstrate the existence of a dilatator pupillæ in the iris and to show that, like the sphincter pupillæ which was already known, the dilatator is composed of plain muscle cells. Many later observers, less skilful or less accurate than Lister, have denied the existence of this muscle, but his work has been vindicated and confirmed by the most modern methods both of physiology and histology. Shortly after this he published observations on the arrectores pilorum which confirmed those of Koelliker, and are especially remarkable because he used a new and now universally employed method—that of microscopic sections—for the investigation. Doubtless the student of the present day, familiar with paraffin-soaked tissues and mechanical microtomes, would despise the rough mode of preparation used by Lister. To use his own words: "A portion of shaved scalp being placed between two thin slips of deal, a piece of string is tied round them so as to exercise a slight degree of compression; the preparation is now laid aside for about 24 hours, when it is found to have dried to an almost horny condition. It then adheres firmly by its lower surface to one of the slips, and thus it can be held securely, while extremely thin and equable sections are cut with great facility in any plane that may be desired. These sections, when moistened with a drop of water and treated with acetic acid, are as well suited for the investigation of the muscular tissue as if they had not been dried."[2]

The existence of such cells in plain muscle had been denied by Ellis in a paper published in the Philosophical Transactions, although Koelliker had produced abundant evidence to the contrary. And every student can now easily demonstrate them. But in those days it was not so easy, and the fact that Lister undertook a difficult investigation and succeeded so admirably in obtaining a definite result placed him at once in the first rank of physiological histologists.[3] It is true these observations were not in themselves purely physiological, but their interest is entirely so, and had this not been the case it is doubtful if Lister would have spent so much time and trouble over them. It is interesting to remark that both investigations were inspired by the work of Koelliker, who was the predominant histologist of his time, but whose training and early work were physiological. Koelliker was an intimate friend of Sharpey, and it was through Sharpey that Lister made his acquaintance. Incidentally I may be allowed perhaps to mention that it was through Sharpey that I myself made the acquaintance and experienced the constant and kindly encouragement of both Koelliker and Lister.

The distinctively physiological bias of Lister's mind was soon to be evidenced (1) by his work on absorption from the intestine and on the flow of chyle in the lacteals, and (2) by his researches on the vascular changes accompanying inflammation. The first of these researches was made in 1853, while he was still in London, and shortly after he had graduated. Their chief object was to ascertain whether solid particles mixed with the food can be absorbed by the lacteals. He observed these vessels in the mesentery of the mouse, and the conclusion he came to was that no such absorption occurs—a conclusion which has never been modified since. The experiments on inflammation were made, or at any rate completed, after he had been definitely established as a young surgeon in Edinburgh: a place he visited on Sharpey's recommendation in 1853, with the intention of spending a month there; but he became Symes's assistant and eventually his son-in-law, and the month extended to seven years!

Having become conscious of the ignorance of surgeons regarding the earlier stages of inflammation, he set to work to investigate these on physiological lines. For this purpose he made use chiefly of the frog's web, but employed also for confirmatory evidence the vessels in the bat's wing—an object he had learned the study of under one of his most distinguished teachers in University College, also a physiologically-minded surgeon, Wharton Jones, the discoverer of the amœboid movement of leucocytes. As his biographer truly remarks, his work on inflammation "impresses the reader by the beauty and simplicity of the experiments described, the originality of the thoughts, and the soundness of the reasoning. . . . The paper was well received at home and on the Continent, and its conclusions have with scarcely an exception stood the test of time."[4] In the same year Lister published also two other papers in the Philosophical Transactions—viz., "An Inquiry regarding the Parts of the Nervous System which regulate the Contraction of the Arteries," and on the "Cutaneous Pigmentary System of the Frog." Both of these are of great physiological interest and contain new and important observations. It is, however, not to be wondered at that his predominant work, which has revolutionised surgery, should have overshadowed his earlier physiological observations, a fact which Lister himself recognised and regretted. I am not sure in my own mind that he was not prouder of his physiological work than of his contributions to surgery.

Blood Coagulation.

His most important contribution to physiology was when he was very fully occupied with surgical work and teaching. It was upon a subject which must always possess a peculiar interest for the surgeon—the cause of blood coagulation. I know of no better or more precise piece of physiological work than this. All kinds of theories were then extant on this subject; there are a good many still! Dr. Benjamin Richardson, who had found that the addition of ammonia to blood would prevent its coagulation, thought that this furnished sufficient evidence to support the notion that the reason blood coagulates when drawn is

[2] Quoted from "Lord Lister," by Sir Rickman Godlee, 1917.

[3] The earlier papers on this subject were published in the Quarterly Journal of Microscopical Science, for 1853; the fuller investigation in the Transactions of the Royal Society of Edinburgh for 1857. They are all to be found in vol. i. of his "Collected Papers," 1909.

[4] This paper was read before the Royal Society in 1857 and published in the Philosophical Transactions for 1858. The actual mode of causation of the vascular changes which Lister was the first to describe was not explained until many years later, the explanation being furnished by the experiments of Dr. Ninian Bruce, working with Professor Hans Meyer, and published in the Quarterly Journal of Experimental Physiology, vol. vi., 1913.

because exposure to air allows the escape of ammonia. And although the researches of Alexander Schmidt had shown, what modern investigations have confirmed, that coagulation is the result of a chemical reaction between substances dissolved in the blood, the reason why this reaction does not occur in the living vessels was completely obscure; the theory which was most favoured being that of Brücke, which explained the phenomenon by supposing that the living wall of the vessel exercises a restraining influence upon the blood in contact with it—which is evidently not an explanation at all. Lister devised a simple experiment which at once upset both theories, and indicated the real cause of blood coagulation—viz., the contact of blood with foreign matter or with injured or dead tissues. He showed that blood can be kept fluid in a segment of a large (surviving) vessel exposed freely to the air, and could even be poured from one such segment to another so as to allow free escape of any ammonia which might be (but isn't) present; moreover, whilst passing through the air the blood would, of course, be removed from contact with the wall of the living blood-vessel. Nevertheless, such blood remained fluid unless the inner coat of the vessel were injured or unless the blood were allowed to come in contact even within the vessel with a foreign body. Lister showed that it is the presence of the injured tissue or foreign body that determines the chemical reactions which produce the coagulum, and not the presence of the living tissues which prevents such reaction. This fundamental fact was settled for all time by the simple experiment of the so-called "living test-tubes" devised by him. The account of this and other experiments on the subject is to be found in the Proceedings of the Royal Society for 1863; it formed the subject of the Croonian lecture for that year.

Vivisection.

By this time Lister was in the full swing of professional work in Edinburgh, and was giving lectures on the principles and practice of surgery in the extramural school. The principles he taught were physiological, both normal and as applied to disease. He recognised that surgery, if it is to be considered a science at all, must be founded upon and can only make progress by the aid of experiments. His great discovery was so founded. His experiments were made with test-tubes, with animals, with patients. But he would never venture to perform a serious experiment upon man without having ascertained by animal experimentation that it was likely to prove successful and was therefore justifiable. On the subject of vivisection his trumpet gives no uncertain sound. When requested by no less a personage than Queen Victoria to make some public declaration against vivisection, he replies as follows to her private secretary:—

> "I should deeply regret that I cannot see my way to complying with this request, were I not persuaded that my doing so would not promote the real good of the community, which I know to be Her Majesty's only object in the matter. And I feel bound to endeavour to express shortly the reasons for my opinion. With this object I can hardly do better than begin by saying that I have myself often performed experiments upon the lower animals, and that, if I have been privileged in my professional career to do anything for the good of my fellow men, more is to be attributed to these experiments than to any other work in which I have engaged. When they were performed without chloroform, as has not infrequently been the case, they have been done at a very great sacrifice of my own feelings; but the greatness of the object in view has appeared to me to over-ride such considerations. . . . It is sometimes said that, although such experiments may be needful and right for the purposes of discovery, they are not justifiable for the demonstration of truths already ascertained. It would, I believe, be very wrong to draw any such line of distinction To take a single instance—to debar the student of medicine from having his eyes opened to the truth of the circulation by seeing the blood coursing through the vessels of the living web of the frog's foot, would be undoubtedly a mistake; for no amount of verbal teaching could do for him what a glance through the microscope at that sight at once effects."

And after explaining at considerable length the relatively painless nature of physiological experiments as compared with the cruelties which are inflicted every day for the sake of improving the quality or appearance of food, or even in sports such as fishing, shooting, and fox hunting, he points out that the sportsman is not commonly regarded as cruel because the inflicting of suffering on the hunted animal is not his main object (which is merely the gratification of himself and his friends) and continues:—

> "But surely those who regard this amusement as justifiable are strangely inconsistent if they brand with the epithet cruel the man who performs an experiment upon an animal at great sacrifice to his own feelings and with every care to render the pain as slight as is compatible with the high object in view."

In his evidence before the Royal Commission on Nov. 1st, 1875, he begins by stating that his first experiments upon animals had been made when he was altogether unknown as a person of any sort of reputation whatever:—

> "When I first took in hand to teach others, I felt that there were some points on which I desired more information than I could get satisfactorily from any book, and my first experiments were performed with the object of preparing myself for teaching, while I was not a person of recognised scientific attainments."

With regard to his early experiments upon blood he remarked that they "had the effect of giving me a kind of pathological information, without which I believe I could not by any possibility have made my way in the subject of antiseptics; and that subject, I believe, is becoming recognised as one of considerable practical importance. I have often felt that without the basis which I derived from experiments on the lower animals, I should never have been able to thread my way through the very perplexing and apparently contradictory facts which I met with in the first instance," also that throughout his whole career after that time he had found experimentation on living animals necessary, and that through the medium of that experimentation originally commenced with other aims he was gradually led "to the development of that method of treatment which is now known as the antiseptic system." Further, with regard to his work on catgut ligatures he definitely states that if he had not made experiments in the first instance on animals he would have had to perform them on man; there was no other alternative.

Physiology the Basis of both Medicine and Surgery.

Engrossed as he was with surgery, Lister never ceased to be a physiologist, and to the end of his days was deeply interested in all forms of experimental work. He was scientific to the core. He admitted, as we have seen, that experimental work was the basis of all his researches in antiseptics, and his work in this as in other directions was characterised by meticulous accuracy, a character which is essential for all scientific investigations. First the facts were ascertained by observation and experiment; then marshalled and collated with observations made by others; the deductions checked by yet other experiments; nothing was left to mere supposition. In this way he arrived at the great generalisation which at once transformed surgery from a mere art which might be practised by any ignorant person into a real science which could only be properly advanced by those who adopt scientific methods. Given an adequate knowledge of anatomy—which is essential both to the physician and to the surgeon—the basis of training in both the branches of what is popularly known as the "healing art" must be physiology. Lister would never have arrived at the position he occupies in the history of surgery if he had not been first a physiologist. Doubtless he was fortunate in his opportunity. He came at the right time, just when Pasteur was engaged in the brilliant researches which indicated the essentially parasitic nature of disease. How eagerly Lister seized hold of that opportunity we have heard from his biographer, and his own tribute to the assistance he obtained from the researches of Pasteur is unstinted; although he had begun his own experiments before he had heard of Pasteur's. I do not know of any surgical con-

temporary of his who could have taken advantage of the opportunity thus offered; at any rate it is certain none of them did so. They all had anatomy at their fingers' ends, but this was the only science which it was then expected they should know, and it did not lead their surgery far along the path of progress.

It is an old tradition that anatomy is the exclusive basis of surgery, but I am happy to think it is every day becoming more of a tradition and less of a practice. Many modern surgeons both in this and in other countries are physiologists as well as surgeons. Physiology has given scientific support to their surgery, and has been in turn materially assisted by it. It would be invidious for me to mention the names of living individuals and in an assembly like this it is not necessary; they are known to most of you. They admit that surgery is based upon experiment; in other words, upon physiology, and that there is no possibility of its advancing in any other way. Like every other science, surgery without experiment must stand still, and no surgeon has any right to experiment upon the human subject if the lower animals are available for the purpose. That those who are learning operative surgery are debarred by Act of Parliament from practising on animals, although permitted to make any experiments they think fit upon human patients, is an incredible piece of folly. Ours is the only country in the world in which so heinous a measure could have been passed into law; the only nation where misplaced sentiment is allowed to displace reasoning, and where the necessities of humanity are subordinated to those of the brute creation. I wonder does the British public fully understand that by the present law no student is permitted to perform any experiment upon an animal with the object of enabling him to do the same operation upon man, and to acquire the necessary skill to do it without danger to his patients. Which of you, I may ask, would like to be the first patient to be operated on even for the so simple operation as the extraction of the crystalline lens? Yet the skill of the operator *must* be acquired by experience, and therefore men, women, and children take the place of dogs, cats, and rabbits. As Sir Rickman Godlee pertinently remarks—

> "The strangest anomaly, as it must appear to our less sanctimonious brethren in the rest of the civilised world, is that our law, while it forbids the granting of a special license to a distinguished doctor to experiment on a chloroformed frog in his own study in pursuit of science, allows anyone who can afford it to hunt a stag to death, or set two greyhounds to course a hare and wager money on the result."

Truly we are a nation of Pecksniffs!

TEAM-WORK.

While it is the case that the progress of surgery must depend upon physiology, it is equally true that the progress of physiology depends upon surgery. Without an adequate knowledge of surgery many experiments which are necessary for the advancement of physiology could not be attempted. I have already given you instances of this, but I will adduce another from the experiments on depancreatised animals which are at present in progress, accounts of which are filling not only the pages of the medical and physiological journals, but even the columns of the daily press. Such experiments can hardly be conducted by one individual. It is not everybody who is endowed, as Lord Lister and Sir Victor Horsley in great measure were, with the requisite knowledge and skill in both subjects to work single-handed. At the present time the importance of team-work, suitably directed, is fully recognised, and this is largely why our knowledge regarding "insulin" has made such rapid advances. Surely such a combination of physicians, surgeons, physiologists, biochemists, pathologists has never before been assembled to conduct any investigation as those who have been working in Toronto. In every combined physiological investigation on animals, one of the team at any rate should be a surgeon, and I can conceive of no more advantageous training for a young surgeon than that which he will obtain by taking part in such an investigation. Examples of the mutual value of coöperation between the surgeon and the physiologist could easily be multiplied, but I hope that those I have put before you are sufficient and may have some influence in promoting that close intercourse between surgery and physiology which is essential for the progress of both branches of science.

I have often wondered what difference it would have made to my own life if Joseph Lister had been elected to the chair of surgery in University College in 1866 instead of John Marshall. It is easily the worst mistake that the Council of the College ever made. The echo of the election was remaining when I joined the College in the winter of 1866 as a very young student. I came to know Marshall very well. He was a good friend to me, and I had a great respect and liking for him. But he was the most uninspiring teacher that I ever sat under. His systematic lectures were desperately dull, and being given late in the afternoon with a monotonous, musical utterance, most of his audience were soon fast asleep; I was one of the sleepers! Nor was his clinical teaching any better; his operating was slow and the reverse of brilliant. Whether he ever fully embraced Listerian methods—at the time I joined they were unknown outside Glasgow—I do not certainly know, but I much doubt if he did so. He was not a physiologist, although he published a text-book of physiology, largely founded on his notes of Sharpey's lectures; I do not think it went through more than one edition. Lister's biographer speaks of Marshall as scientific and a good teacher, but these are terms which I cannot endorse. He had a charming personality, and as he was already on the staff of the hospital he obtained the chair in preference to Lister, who had been many years away from the institution and was unknown both personally and through his work to most of the staff. John Marshall became a Fellow of the Royal Society and President of the Royal College of Surgeons. There is an admirable bust of him at Lincoln's Inn Fields. But Lister's name will still be famous when Marshall's is forgotten.

It has always been a source of regret to me—as it must be to all alumni of University College—that Lister's work was not carried out at his old school. But the fates ordained otherwise, and to Glasgow and Edinburgh must be conceded the credit of nursing the new surgery into vigorous existence. I believe it would have made a great difference in the rapidity of the spread of the new doctrines if they had emanated from London sooner, and Lister no doubt thought so himself, as his subsequent migration to London showed. And the atmosphere of University College—if not of the Hospital—was distinctly scientific, and at any rate amongst his scientific colleagues there he would have received full encouragement. It was in 1866 that Lister applied for the appointment—less than a year after he had started his experiments on antiseptics in Glasgow. It was 16 years (1882) before Listerism came into general use in hospital surgical practice in London. The change occurred when Horsley was still a student and long after my own time. And if I have wondered what a difference it would have meant to me, a mere physiologist, to have had a surgical training under Lister, how much more would it have meant to Victor Horsley if he had come under the direct influence of this great surgeon. Instead of being Marshall's, he would have been Lister's house surgeon, and how greatly he would have benefited by the close relationship with Lister and how keenly he would have followed and assisted in his experiments those who best know both men can appreciate!

It is easy to speculate on the "might have beens"! Sufficient to know that as soon as he came into his own Horsley was foremost in his adoption of Listerian methods, and it was in consequence of this that that particular combination of surgery with physiology which I have given you as my first illustration of the mutual benefits they confer on one another came

about. If Lister had come to University College in 1866 I should have learned his methods from the master himself, but I should in all probability have missed the opportunity of conjoint association with the colleague whose memory we are assembled to-day to commemorate, and whose loss not only to physiology and surgery, but to the whole nation, will be felt for many a year.

ENCEPHALITIS LETHARGICA:

SOME OBSERVATIONS ON A RECENT OUTBREAK.*

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IT is now six years since von Economo drew attention to the occurrence in Vienna of a disease which had hitherto, in this generation, escaped record, with the exception, as it would appear, of certain isolated and sporadic cases; several of the latter were described about the years 1903, 1907, and 1913,[1] but their significance was missed. There was an outbreak in France at the same time as the Vienna epidemic, but its nature appears to have escaped attention at the time. Since 1917 the disease has spread pandemically throughout the world. It has become in many places as common as enteric fever, though as fatal as unmodified small-pox; its clinical manifestations are protean. The sequelæ and residua are frequent and severe, and render the individuals affected useless to the community. The problem of its prevention is as yet unsolved. It was stated,[2] as late as March this year, that "it would appear as if the disease had spent its epidemic force during the winter of 1920–21, and there was reason to think that it had become less malignant in its clinical manifestations." This is far from being the case, for there have been recrudescences this winter in our two principal western seaports—namely, Glasgow [3] and Liverpool—as well as in New York and other parts of America, which have exceeded in severity the previous outbreaks; as many as 88 cases have been notified in New York City in one week in February.[4] Czecho-Slovakia and Sweden, among European countries, have also suffered severely.

Incidence in Liverpool.

This paper is mainly based on 127 Liverpool cases, the great majority of which have come under my personal observation, and of all of which full notes have been kept. The numbers of cases notified in Liverpool in successive years from 1919 onwards have been 2, 17, 27, and 5. Up to the end of April this year 76 cases have been reported—more than the total for the antecedent four years. Taking the onset of the disease, the cases reached a maximum in the last week of January. Moreover, during the same period about 30 cases have been reported in the districts immediately adjacent to Liverpool, and having a population aggregating some 500,000 persons.

Prior to this year cases mainly occurred in little groups associated in time and space. This year cases have been widespread, occurring simultaneously throughout the city and surrounding areas; the conflagration occurred in a population already widely infected, so it would seem, but yet localised to the vicinity of Liverpool.

Within the last 12 months there has been a change in the type of the disease, which has become more severe and oftener fatal, the fatality rates for the years 1920 onwards having been 12, 22·5, 40, and 39 per cent. respectively. The fatality rate for the last year and a quarter is double that for the preceding two years. These rates compare favourably with those for the country generally, but this is perhaps due to more complete notification in Liverpool, as in other teaching centres. It must be recognised that the clinical type of the disease has somewhat altered, and that the cases which from the prominence of the feature of lethargy led von Economo to name the disease encephalitis lethargica and evoked its popular paraphrase of "sleepy sickness" now form but a portion of the whole; these terms are misnomers. This change of type occurred in Italy and France as early as 1919. In 1921 the majority of the cases occurring in Liverpool (81 per cent.) could still be classified as "oculo-lethargic" in type, and the most prominent symptoms were (*a*) lucid somnolence—i.e., lethargy from which the patient could be roused; (*b*) mask-like facies more or less marked and expressing the patient's mental apathy; (*c*) voice changes, the voice like the face often becoming tired, expressionless, and toneless, though thick and slurring speech is not uncommon; and (*d*) eye signs, especially early and transient diplopia, semi-ptosis, nystagmus, squint, fixation, inequality or irregularity of the pupils, and cycloplegia. Other paretic signs, such as facial paresis or dysphagia, might be present. Constipation was common; the most prominent symptoms were on the side of defect or depression of function—i.e., lethargy, somnolence, and paresis. Nevertheless, tremors, jerky movements or delirium were often added to the picture, and in five out of 17 cases notified in 1920 myoclonus, general convulsions, or choreiform movements were present.

Altered Type of the Disease.

This year the picture has considerably changed. Less than half the cases—i.e., 45 per cent.—can be classified as oculo-lethargic owing to the occurrence of lethargy (usually associated with ocular paresis) at some stage, the remainder have been frankly myoclonic (14 per cent.), choreiform (25 per cent.), or psycho-motor (16 per cent.) in type. Instead of lethargy there was often extreme restlessness and excitement, sometimes delirium of a wild and unrestrainable type; instead of somnolence there was prolonged sleeplessness; instead of or in addition to paresis there was myoclonus (80 to 100 contractions per minute), or other form of hypermotility, often associated with severe pains; whole groups of muscles—e.g., of the shoulder girdle or of the diaphragm and abdominal muscles—may be affected, and a coördinated series of movements may be performed. Many cases present irregular jerky movements or twitchings, and these merge into the cases presenting choreiform movements in which chorea gravis is closely mimicked, except that the movements persist during sleep. Some of these unfortunate persons present symptoms of an extraordinary type; one boy—brother of a lethargic case—was described as leaping from all fours into the air, the movements resembling those of the mechanical toys sold by pavement vendors as "jumping beetles." Another boy when seen by me had both eyes rolling with great rapidity in one direction, his tongue rolling in his mouth in the opposite direction, the while the remainder of his face was contorted by a ceaseless succession of grimaces. He was in a state of extreme terror which was clearly depicted on his face. If asked a question he would answer rationally and then resume the grimacing. A most distressing symptom in some cases was tachypnœa—a respiratory rate of 80 per minute for a fortnight or more in two cases.

One of the characteristics of the disease, especially of the recent cases, is the frequent occurrence of delirium of an occupational form. There is disorientation both as to time and space, somewhat as may happen in delirium tremens; the person thinks he is or ought to be carrying on his ordinary occupation. A painter continually performed the movements of painting; a sailor out of work got up in the middle of the night to look for work; a servant girl got up at a similar hour and lit the kitchen fire, only realising the absurdity of the action when it was completed; a child whose duty it was to look after a baby rolled up a bundle of towels and nursed them; a ship's quartermaster, when surrounded by anxious relatives, believed himself to be in the saloon of the ship among the passengers. It is, however, often a feature of the delirium—as of the lethargy—that the patient can be roused to reason for a brief period by a sharply put question or command.

* A paper read before the North-Western Branch of the Society of Medical Officers of Health.

The whole aspect of the disease has developed in the direction of hyperactivity of the brain rather than depression. Even the cases classed as oculo-lethargic more often than formerly present at some stage of the disease, the features of sleeplessness, excitement, delirium or hypermotility. The occurrence of myotatic irritability, or of exophthalmos, of vertigo, or of waxy flexibility, and occasionally scarlatiniform or purpuric rashes, have also been noted here. In describing a case one frequently finds oneself employing terms implying the imperfect development of a sign or symptom such as semi-ptosis, transient paresis, nystagmoid movements, and so forth.

Difficulties of Diagnosis.

Certain cases give rise to special difficulty. Tumour or abscess of a "blind area" of the brain is one of the most difficult to distinguish, though the ophthalmoscope assists greatly; but even with this aid the diagnosis may be in doubt; optic neuritis may be present in encephalitis lethargica and absent in cerebral tumour. Examination of the cerebro-spinal fluid may be of considerable value; cerebro-spinal fever and syphilis may be excluded by cytological examination and by the Wassermannn test; in encephalitis lethargica the cells present are lymphocytes and few in number. Separation from tuberculous meningitis may be difficult, and here the estimation of the sugar content of the cerebro-spinal fluid is of great assistance—the normal content is about 60 mg. per 100 c.cm.; in encephalitis we have not found it lower than 68 mg. and the average is about 75; in tuberculous meningitis it is always below 60 mg. In two recent cases of the latter disease, which were notified as encephalitis lethargica, it was 43 mg. in the first case, and in the second was given on two examinations as "sugar much reduced" and "sugar absent," tubercle bacilli being found at the second examination. A tuberculous encephalitis may be otherwise quite indistinguishable. We are much indebted to Dr. R. Coope, who has carried out the estimation in a number of cases. It is essential that the estimation of sugar should be made by a competent bio-chemist, and that the fluid be examined promptly, especially in summer. Mild or abortive cases, especially in children, present great difficulty, and there can be little doubt that many of these cases occur but escape observation.

Residua and Sequelæ.

One of the gravest aspects of the disease is the frequency of residua and sequelæ. Not only is the mortality heavy but in a high proportion of cases the brain is permanently damaged. The sequel noted most frequently is "Parkinsonianism" or symptomatic paralysis agitans, from which disease it is distinguished by its occurrence in persons aged 10 to 40 years old, as a rule, and by the absence of the pill rolling movement. The picture presented by the combination of a rigid, mask-like face, slow speech, drooling of saliva and anthropoid gait, &c., are very characteristic, if not pathognomonic, and often enable a diagnosis to be made retrospectively. Other residua are myoclonic and also slow rhythmic movements; psychoses, such as dementia præcox; and alterations in character and temper, a well-behaved child becoming a "perfect little monkey." One of the conditions seen has been an inversion of day and night, the person being awake all night in a restless and excited condition and only dropping off to sleep towards morning and may then spend the greater part of the day sleeping. These sequelæ may begin to develop immediately after apparent recovery from the acuter symptoms, or may not appear for one, two, or more years.

Relapses.

Another serious feature is a liability to relapse, the acute symptoms being reproduced; the recurrence has usually been at the time of year when the disease is most prevalent—one case of the series relapsed two years after the first attack. An analogous event is the occurrence of two or three cases which only became acute this winter, but gave histories of ill-defined nervous disease going back to the preceding summer. Another patient, a boy of 12 years, who had developed a well-marked nystagmus exactly 12 months before, underwent a definite attack in February of this year. These cases point to climatic changes markedly affecting the susceptibility to the disease. Another case in point is that of a sailor who went on a voyage to the West Indies, lasting five weeks, during which time the crew did not leave the ship. He fell sick with encephalitis three days before reaching this port. Here we must presume the infection was latent on the vessel until she returned from a warm climate to a cold one. The sudden change of temperature apparently increased the susceptibility to the disease. This phenomenon has often been observed in the case of beri-beri; in vessels so affected often no cases will develop until they reach cold weather, when a considerable number will fall ill in rapid succession. Undoubtedly the virus of encephalitis may persist for prolonged periods, and recurrence of symptoms may perhaps be associated with recurrence of infectivity. In view of the liability to residua and relapses prognosis must be most guarded.

Epidemiology.

The earlier reports laid stress on the sporadic character of the disease and the scarcity of multiple cases in a family. It appeared as if the susceptibility to the disease was very low and that carriers were probably numerous. The outbreak in the Derby girls' home, in which 12 persons (of whom five died) fell ill in a population of 22 persons of susceptible age, pointed to the possibilities of the disease. Of like character appears to have been an outbreak in an asylum at Mulheim last summer. Here 28 cases with 13 deaths occurred in 20 days, six being nursing sisters and two doctors. John and Stockebrand, who reported[5] the outbreak, considered that it was not one of encephalitis lethargica but a new disease; basophil stippling of the red blood corpuscles was present in all cases. Botulism was excluded. Dysphagia and ophthalmoplegia were frequent symptoms; the outbreak was probably one of encephalitis lethargica of an aberrant type due to a virus of enhanced virulence. Fyfe[6] has described four ambulatory cases in a school. Kling and Liljenquist[7] have described an epidemic in Lapland, from 7 to 45 per cent. of the inhabitants of the stricken villages being affected; in one household all the members were affected. Cases of simple malaise with little or no focal symptoms were numerous.

In all these outbreaks abortive or larval forms have been more or less numerous. It is probable that there are a considerable number of missed cases even of the typical form, as the disease is by no means always recognised, and it would appear from the instances to be cited that case-to-case infection is not infrequent.

A fatal case occurred on Nov. 27th in a male aged 21 years. His sister, aged 13 years, who had previously suffered from chorea, fell ill with what appeared to be a relapse about Christmas. On Jan. 31st she became worse, her temperature rose to 100·5° F. and diplopia and severe headache were complained of. An acquaintance, a boy of 15 years, who lived in the same street, was taken ill on Dec. 26th with a typical lethargic attack and was removed to hospital on Jan. 7th. On Feb. 2nd a case occurred in the immediate vicinity of the street, but no history of contact could be obtained. On March 29th one of the school medical officers drew my attention to a child aged 7 years, who lived in the next street, and who had been suffering from lethargy since Feb. 15th. Inequality of the pupils was still present, and the child displayed a change of temperament; she had used abusive language to her mother and threatened her with a knife, though previously of a quiet disposition. This child was acquainted with the family of the first two cases. Here we have, in a very small area, a series of five cases of which four were acquaintances. Another couple of cases in a family have already been referred to; a case had previously occurred in the same street a few doors off, but there was no direct communication with them.

A railwayman was taken ill with symptoms of neurasthenia last Christmas. On April 16th he suddenly developed an acute choreiform attack which has since proved fatal. Another railwayman, well known to him, who lived in the next house, but had been ill from September to December with abdominal pain and vomiting, in December developed diplopia, choreiform twitchings, and delirium, and was sent in by his medical attendant as a case of encephalitis lethargica to an institution where he died on March 29th. Whether infection was derived by the first case from the second, or vice versa, is difficult to say, owing to the long latent periods in both cases.

A teacher at an elementary school was taken ill on Feb. 8th. She returned next day to her home outside Liverpool, and I am informed that she suffered a typical lethargic attack. In the same week her four co-workers in the infants' department were affected with severe headache, nausea, and drowsiness, but no catarrhal symptoms. One of them suffered from a temporary but marked dimness of vision, probably due to a cyclopiegia. There is evidence here that personal case to case infection is not infrequent, and that missed cases and mild and abortive cases, also cases during the sometimes prolonged latent period, are factors in the spread of the infection. It is probable that if all the mild and abortive cases were known we should be less inclined to speak of the sporadic distribution of the others.

Susceptibility.

There are clearly great variations in the susceptibility to the disease. The susceptible age is especially the decade from 10 to 20 years, though among this series are cases aged from 5 months to 70 years. The disease, therefore, differs from other notifiable diseases in that the greatest number of cases occur at an age when practically all infectious diseases, including

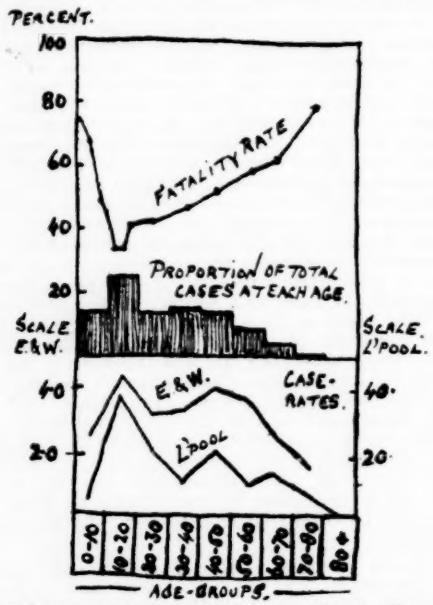

Chart based mainly on statistics given in the Report of the Ministry of Health, No. 11 (1922), showing inverted relationship of age incidence and fatality of encephalitis lethargica.

epidemic encephalitis tself, are least fatal. This inverted relationship is well shown in the figure, drawn mainly from statistics given in the Ministry of Health's recent report.[8] There is no special sex liability, though pregnant women appear to be specially susceptible; three were affected this year, but their offspring were not. Choreiform cases may be very difficult to distinguish from chorea gravidarum. Seasonal influence is very marked; cases begin to appear about October or November, increase in December, and reach a maximum about the end of January or beginning of February. For reasons already given, this seems to be due to an increased susceptibility of the individual. The small summer outbreak of 1920 appears to have been exceptional.

Previous injury to the brain, &c., appears strongly to predispose. Three cases had recently suffered from a fairly severe blow on the head. One patient had a long-standing dorsal kyphosis. Another had suffered from chorea. In still another case a girl was taken ill the day after the extraction of a number of teeth under anæsthesia, which animal experiments[9] show definitely to precipitate an attack. Encephalitis seems to predispose to certain secondary invaders, apart from the late occurrence of broncho-pneumonia; in two cases diphtheria developed, in one scarlet fever, and in another erysipelas. Septic infections are rather frequent. In two cases the first symptoms were those of pneumonia.

Association with Other Diseases.

There is still some discussion as to whether epidemic encephalitis is a specific infectious disease. The age and seasonal incidences clearly demarcate it from poliomyelitis. The views expressed by Crookshank and others that it has some connexion with influenza find no support in the cases under review.

In only four of this year's cases was there a history of influenza within six months preceding the onset, and two, both from the absence of catarrhal symptoms and on the admission of the medical attendant, were not genuine influenzal attacks, but merely the onset of encephalitis with pyrexia but no localising symptoms. The extensive wave of influenza during the spring of 1922 was accompanied by no corresponding increase of encephalitis, but rather the reverse. In Liverpool, if there is any relationship between the diseases it is inverted, as encephalitis would seem to prevail mostly in years when influenza is in abeyance, as in the present year. The production of an encephalitis resembling Economo's disease, and *not* a meningitis caused by Pfeiffer's bacillus, when the filtrates of influenzal sputa are intrathecally injected into rabbits, requires confirmation, and does not appear crucial in any case.

Until more definite evidence is forthcoming the association of influenza and von Economo's disease may be regarded as fortuitous or non-existent. What, then, are the factors that have produced the present pandemic? Has some local exaltation of the virulence of the organism—as, for example, happened at Derby and ex hypothesi at Mülheim—produced a virulent strain, for the spread of which the world war provided most favourable conditions, notably the unprecedented movements of the millions of troops? In that case are we to conceive that, prior to the present pandemic, invisible epidemics affected the population and presumably immunised them, but only here and there, where extremely susceptible individuals were attacked, produced recognisable cases? But the shape of the curve of age distribution of cases is against any hypothesis of such a widespread immunising epidemic, unless that immunity produced were but of short duration; this might well be, though it would bring this disease into sharp opposition with most of the other ectodermoses—e.g., small-pox, chicken-pox, and poliomyelitis; and yet vaccinia, which is so closely allied to variola, produces an immunity which fades with the lapse of time.

Or, on the contrary, is it the infectivity of the organism that has increased? Or have infectivity and virulence been simultaneously enhanced? At least it is clear, seeing that we are dealing with a world-wide pandemic, that it is *not* merely due to a diminished resistance on the part of the human host, though this may have been a factor in the original alteration of the virus of the disease.

Whatever the origin of the disease, we are witnessing an epidemic apparently affecting a virgin population—an epidemic which, further, appears to be in course of evolution. The besiegers of the castle are altering their tactics in full view of the besieged. This is an epidemiological event of sufficient infrequence to warrant the closest attention being paid to it.

My thanks are due to Prof. E. W. Hope for permission to publish these observations, and to the medical men in all the Liverpool hospitals and also

in general practice who have freely permitted me to visit and make notes of their cases and have provided me with detailed information concerning them.

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TWO CASES OF UNILATERAL ŒDEMA WITH ALBUMINURIA.

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THE following cases of unilateral œdema with albuminuria afford considerable opportunity for discussion.

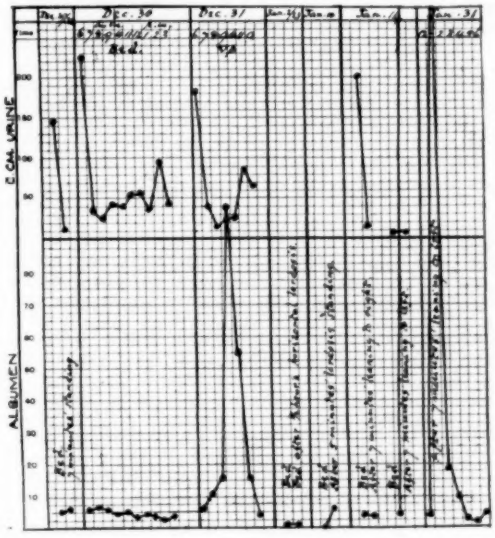
CASE 1.—In August, 1922, a teacher, aged 40 years, came to consult me complaining of swelling of the left foot of six years' duration, which only gave her serious inconvenience in the hot weather. Very occasionally the right foot was also a little swollen. For the same period she had been feeling tired and had suffered from headache. Her doctor informed me that the urine invariably contained albumin, and he called my attention to the presence of a systolic murmur at the apex of the heart. On examination there was definite œdema of the left foot. There were no visible varicose veins, and the right foot was free from œdema. The urine contained a haze of albumin, but no casts were to be seen in the centrifugalised deposit. The pulse was slow and regular and the heart was not appreciably enlarged, though the apical systolic murmur was well marked. The diastolic pressure was 76, the systolic 142. I made some entirely unsatisfactory suggestion as to the possible presence of deep-seated varicose veins, but I realised that I had in no way solved the problem of the diagnosis, and put the case aside in my mind for future reference should occasion arise.

CASE 2.—Towards the end of December a girl, 19 years of age, was sent into one of my wards in the Birmingham General Hospital with œdema of the left foot and albuminuria, the former of nine years' duration. The right foot was said to be occasionally slightly swollen, though no œdema was seen during her stay in hospital, and she volunteered the statement that the left-sided œdema was worse in the summer than in the winter. The heart was normal, as was the blood pressure for the age, and no casts were at any time discovered in the urinary deposit. There were no varicose veins.

For the first few days the patient was kept in bed, and the œdema of the left foot gradually subsided, though it invariably returned in the upright position. The urine in bed contained only a trace of albumin. A series of observations were then made with regard to the albuminuria, the results of which are recorded in the chart (Fig. 1). The albumin measurements are made in terms of the "unit" of albumin, slightly modified, recently described by me in a paper on orthostatic albuminuria[1]; a brief account of the method is appended at the end of this communication. The "unit," as I now make it, is an exceedingly small quantity, and amounts, I believe, to about 0·002 per cent. of dried egg albumin, or a little less, but I do not claim for it any absolute value. The upper series of curves record the volume in cubic centimetres of the specimens of urine examined.

On Dec. 29th the urine passed in bed contained 5 units of albumin. The patient then stood upright for 7 minutes, got back to bed, and passed urine again. This specimen contained only 6 units of albumin. On the 30th hourly specimens were passed in bed from 6 A.M. to 3 P.M., 10 oz. of fluid being taken at 6, 8, and 10 A.M. and 1 P.M. The urine excretion shows a considerable failure of diuresis, and the curve of excretion somewhat resembles that which I have described as often met with in cases of orthostatic albuminuria. The albumin content varied only between 3 and 6 units. On the 31st she was up and about the ward from 6 A.M. to noon, passing urine at intervals of an hour. The quantity of albumin steadily increased, until at 9 o'clock it amounted to a thick cloud (100 units). It then as steadily diminished, and at noon only 4 units were measured. The quantity of urine showed but little relation to the amount of albumin contained. These observations were repeated a few days later with much the same result, although the albuminuria of the upright position was not quite so large as before, but again it showed the striking early rise, with a drop towards middle day, and this was noted on several other occasions. The larger degrees of albuminuria were therefore mainly of the orthostatic or postural variety, although it is noticeable that the bed urine was seldom free from protein, that the big rise

FIG. 1.



Case 2.—Albumin measurements in units, and volume of specimens of urine examined.

in the albumin excretion always took two or three hours to develop and came to an end by noon, and that the response to 7 minutes' standing was extremely slight.

The question of a possible lordosis was then investigated. On Jan. 2nd the patient lay in bed in a position of artificial lordosis for the space of half an hour. The urine, before and after the experiment, contained only 1 unit of albumin. She then stood for five minutes in a position of extreme lordosis. The urine passed immediately afterwards contained 5 units, a much smaller amount than is generally produced in this position in cases of orthostatic albuminuria. An X ray photograph of the spine showed complete absence of lordosis and a marked lateral curvature with the lumbar convexity towards the left. The latter was obvious to external examination.

I was aware that Vorpahl[2] had described a case of orthostatic albuminuria in a patient with lateral curvature in which catheterisation of the ureters had shown that the albumin came from the right kidney only, and, although I did not feel that this procedure was justified in my own case, I thought that some light might be obtained on the question by further postural observations.

On Jan. 14th the patient passed urine in bed containing 1 units of albumin. She then stood for 7 minutes leaning well over towards the right, so as to accentuate the lumbar convexity of the spine. The urine at the end of the experiment contained rather less albumin than before. She then stood for the same time leaning in the opposite direction, with the result that the urine passed immediately after getting back to bed was almost solid with albumin, no less than 600 units being measured. On Jan. 31st the observation was repeated with much the same result. She remained up, and an hour later the albumin had fallen to 18 units, and an hour later still to 10. For the next three hours the urine was almost free from albumin.

[1] Quarterly Journal of Medicine, January, 1923.

[2] Berl. klin. Woch., May 2nd, 1910.

Although the final proof of catheterisation of the ureters is not forthcoming, it seems to me that these experiments afford good reason for believing that the albumin was coming from one only of the two kidneys, but which of the two is involved must remain a matter of uncertainty. It is to be noticed that in Vorpahl's case, in which the lumbar convexity was apparently towards the left, the albumin was found to be coming from the right kidney. But Dr. Parkes Weber [3] has called attention to several observations showing that in orthostatic albuminuria the albumin not infrequently comes from the left kidney only, and I think that the left-sided œdema in my own case makes this a probable assumption. The case to be quoted below also supports the left-sided origin of the albuminuria.

The question of the relationship between the œdema and the albuminuria now arose for consideration. It will be remembered that in both my cases the œdema was practically confined to the left foot and leg, and Dr. Weber [4] refers to a case described by R. Ehrmann [5] of a young man, aged 20 years, with albuminuria and chronic œdema of the left leg, in which catheterisation of the ureters showed that the albumin was coming from the left kidney only. I know of no other recorded case, and one must assume, in the absence of evidence to the contrary, that there is some special reason for the limitation of the œdema to the left side. When I showed my case at the Midland Medical Society [6] the suggestion was made that there might be a single large kidney, in some way causing venous obstruction, but this suggestion is negatived by the fact that I and some of my colleagues have felt both kidneys in their normal position. Being unable to devise for myself any explanation of the association, I referred the problem to Prof. J. C. Brash, and he at once proposed an exceedingly ingenious and, as it seems to me, quite possible solution of the difficulty. Prof. Brash informs me that there is frequently a small vein running vertically between and connecting the left iliac and renal veins, and that this vein represents either the left post-cardinal or the left supra-cardinal embryonic vein.[7] Sometimes this vein is found of larger size, and in these cases the post-renal portion of the inferior vena cava may be correspondingly diminished. Indeed, occasionally this portion of the inferior vena cava may be entirely transferred to the left side, and under these circumstances the whole of the blood from the lower extremities must pass into the left renal vein in order to reach the general portion of the vena cava. Prof. Brash suggests that if the post-renal portion of the inferior vena cava were in this way duplicated to a considerable extent, so that the blood from the left leg, and perhaps some from the right leg, passed into the left renal vein, then any obstruction of the latter would tend to produce an albuminuria with œdema of the left lower extremity, and occasional œdema of the right foot also. The accompanying photograph (Fig. 2), for which I am indebted to Dr. J. F. Brailsford, is made from an anatomical preparation lent by Prof. Brash for reproduction in this paper, in which such duplication is present. If this condition were carried a little further, I think that an adequate explanation of the association of left-sided œdema with albuminuria would be forthcoming, assuming the existence of some obstruction of the left renal vein. The simultaneous occurrence of this anatomical peculiarity with a lateral curvature—again assuming that the curvature is the cause of the venous obstruction—would, of course, be a rare event, but these cases must be very rarely met with if it be really true that up to the present time there is only one on record. Whether albuminuria often occurs in cases of lateral curvature I do not know. A few cases have been kindly sent me by my surgical colleagues, and in only one was albumin present in the urine. In that case a slight cloud was found on the first examination, but on a subsequent occasion neither standing in the upright position, nor leaning to either side, produced any albumin. The cases are, however, too few in number for any definite statement to be based upon them. The anatomical explanation suggested above is, of course, only a surmise, and demonstration of its truth or the reverse must await the opportunity of post-mortem examination. It would be interesting to know whether, in the cases of orthostatic albuminuria with albumin coming only from the left kidney, to which Dr. Parkes Weber calls attention, there was any lateral curvature of the spine.

FIG. 2

Photograph by Dr. Brailsford of anatomical preparation lent by Prof. J. C. Brash, showing duplication of post-renal portion of inferior vena cava.

Even if this be the correct explanation, the problems raised by my two cases are not at an end. Both my patients volunteered the statement that their œdema was definitely worse in the summer, and I have recently heard that, during my temporary absence from hospital, the second patient came up complaining of a fresh increase in the œdema (June, 1923). I have not, however, had an opportunity of confirming this by actual observation. Increased sweating might account for an apparent increase in the albuminuria, if it occurs, but it is difficult to see how that can be invoked as an explanation of the increase in œdema. This new type of "cyclical variation" is difficult to explain, as is the marked tendency in my second case for the albuminuria to occur in large quantities for a brief period after getting up. In the more typical cases of orthostatic albuminuria it is well known that the albuminuria may come to an end in the late afternoon, and in the paper previously referred to[1] I have brought forward some evidence to show that this is not due to an adaptation to the upright position gradually acquired in the course of the day. But in none of the cases of which I have records have I come across this persistent isolated rise in the albumin output taking place a few hours after getting out of bed. Why the effect of the upright position should take from two to three hours to establish itself I do not know, but the subsidence in the morning of Dec. 31st and in the afternoon of Jan. 31st does suggest that it may here be a matter of adaptation. Again, the œdema in my first case did not set in until the patient was 33 or 34 years of age, and had only been present for 10 years in the second. In the latter the scoliosis may possibly have been of recent origin, but I doubt

[3] British Journal of Children's Diseases, June, 1922.
[4] Medical Press, March 7th, 1923.
[5] Berl. klin. Woch., 1911, xlviii., 496.
[6] THE LANCET, 1923, i., 386.
[7] Huntington and McClure: The Development of the Veins in the Domestic Cat, &c., Anat. Record, vol. xx., December, 1920.

if such an explanation would be likely to apply to the elder of the two patients, and again I do not know that in that case any scoliosis was present. In the paper already quoted I have given some reasons for thinking that orthostatic albuminuria is not purely mechanical in origin, and that in many cases at any rate some slight renal damage has probably occurred. It may be noticed that my first patient had complained of feeling tired and of headache during the period over which the œdema had lasted, but there was no history of any preceding illness.

I may conclude my paper by briefly describing the method of albumin measurement adopted in constructing the above chart. The method is described in detail in the *Quarterly Journal of Medicine*[1] and is based upon the comparison of the coagulated albumin with a standard haze.

Three stock solutions are used: (1) N/500 barium chloride solution in distilled water; (2) N/500 magnesium sulphate solution in distilled water; and (3) distilled water, to every 100 c.cm. of which are added 0·01 c.cm. of saturated picric acid solution in distilled water and 0·02 c.cm. of freshly made 0·2 per cent. Bismarck brown. Solutions 1 and 2 are kept in bottles previously treated with strong hydrochloric acid and a crystal of thymol is added to prevent bacterial growth.

In order to produce the standard haze, which constitutes the "unit" of albumin, half a cubic centimetre each of solutions 1 and 2 are mixed together in a flat-bottomed tube of thin glass, 15 cm. in length, with an internal bore of 1·1 cm., made for me by Messrs. Philip Harris, of Edmund-street, Birmingham. The mixture is allowed to stand for five minutes, and 8 c.cm. of solution 3 (5 c.cm. in the original paper) are then added. The albumin estimations are made by measuring a known quantity of the boiled albuminous urine, with the addition of a few drops of saturated salicyl-sulphonic acid solution, into another tube of the same size, and diluting with water pigmented as in solution 3 until the hazes in the two tubes match one another, care being taken that the degree of pigmentation in the tubes is kept as nearly as possible the same. In dealing with a heavily albuminous urine, at least a tenth part of the salicyl-sulphonic acid solution must be added to the urine, and this dilution must be allowed for in the calculation. The number of dilutions needed in order to match the two hazes gives the measure of the amount of albumin contained in the urine. I should add that to arrive at the highest possible degree of accuracy, the specific gravity of the specimens examined should be brought to a fixed point, as is the case with the Esbach albuminometer.

This method does not pretend to attain strict scientific accuracy, but I have shown that with care a close approximation to the truth, and a reasonably correct picture of the output of albumin, however small, can be obtained. The advantage over the Esbach method, apart from the abolition of the 24 hours' standing, lies of course in the fact that the standard haze method is applicable to the small, as well as to the large degrees of albuminuria.

A CASE OF
CORTICAL NECROSIS OF THE KIDNEY
WITH POLYARTERITIS ACUTA NODOSA.

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THE following case is brought to notice on account of the extreme rarity of the association of these two conditions. The term polyarteritis acuta nodosa was introduced by Ferrari (1903) to describe a group of cases having all the symptoms of an acute febrile illness, the lesions found post mortem being multiple nodular swellings in the smaller arteries. A summary of the cases described up to 1907 is given by Carnegie Dickson, who differentiated between periarteritis nodosa, which is almost always of a syphilitic origin, and polyarteritis acuta nodosa, of which he collected 16 samples from the literature in which syphilis was apparently not the causal agent. He also describes in detail a case which came under his own observation, giving drawings of the vessels and the microscopical appearances. In his own case and in several of those quoted, one of the principal symptoms at the onset of the disease was acute abdominal pain. In his own case there was present definite evidence of a past tuberculous infection in the shape of caseous mesenteric glands.

An additional case is described by Beattie (1912) in which again the picture was that of an acute febrile disease in which post mortem the lesions present were multiple nodular swellings of the smaller arteries. Microscopical examinations in all these cases showed the middle coat of the arteries to be most affected. In these cases described by both Carnegie Dickson and Beattie, the kidney showed thrombotic areas and acute nephritis but not cortical necrosis. With regard to the condition of cortical necrosis of the kidney, this is also of considerable rarity. It has been met with chiefly as the complication of the later stages of pregnancy associated with symptoms of eclampsia, but is extremely rare in males. A case has been recently described by Bamfurth (1923). The patient, a soldier in the Salonica Force during the late war, was at the time suffering from malaria, though there was no evidence that this was in any way a contributory cause of the kidney lesion.

The following are the particulars of the present case:—

A boy, aged 13, was admitted on Nov. 25th, 1922, to the South Devon and East Cornwall Hospital, under the care of Mr. G. Robinson, senior surgeon, to whom I am indebted for permission to publish this case.

History.—A week previous to admission he had had very severe spasmodic pains in the right side of the abdomen with fever. This had persisted until on the day of admission he began to pass bright-red urine. Before admission he had noticed no blood in the urine and had passed a normal amount. No œdema had been noticed.

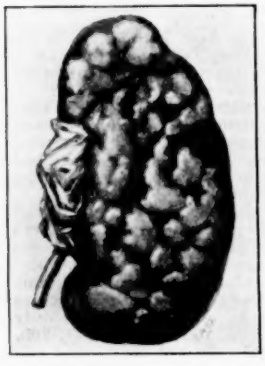
Condition on Admission.—He was rather pale, but otherwise of healthy appearance. No puffiness about the face; great tenderness below both costal margins, but no abdominal rigidity, and no tumour to be felt in the abdomen.

Course of Case.—On the day of admission he had nine fits within the hour, but soon after was perfectly conscious and showed no signs of drowsiness. On that day he only passed 1 oz. of urine. Temperature, 100·8° F.; pulse, 100. Shortly after admission abdominal pain was only slight and he began to pass more urine; four days after admission he was passing 2 pints a day. This amount steadily increased, until on the day before his death he passed over 4 pints. Blood pressure, 106 mm. Hg. Examination of the eyes showed no abnormality of the fundus. Examination of urine on Nov. 28th, 1922, showed a cloud of protein, a few red cells, leucocytes, and a few hyalo-granular casts. On the 29th estimation of the blood-urea gave 22 mg. of urea per 100 c.cm. blood, the diet at this time being almost entirely milk. On Dec. 7th the urine showed no evidence of blood to the naked eye. In the centrifugalised deposit there were a few red cells and leucocytes; no casts were seen; calcium oxalate crystals were numerous. Further examination of the urine on the 28th showed a cloud of protein, red cells, and leucocytes as before and fairly numerous granular casts. Cultures of the urine were sterile. A blood count on the 28th showed 16,200 leucocytes per c.mm., with a differential count as follows: Polymorphs, 82 per cent.; lymphocytes, 14 per cent.; large hyalines, 2 per cent.; eosinophils, 2 per cent.

Throughout, until the patient's death on Jan. 13th, 1923, as has been stated, he continued to pass between 2 and 3 pints of urine a day. No œdema was ever present. Latterly, the abdominal pain disappeared. He complained of no headache but ate badly, and slowly wasted. Towards the end the abdomen appeared rather distended and the superficial veins were prominent. At this period there was a diffuse systolic murmur heard over the base of the heart. There was no diarrhœa or constipation, the bowels acting regularly once a day. There was no vomiting. During the six weeks he was in hospital there was irregular fever with a maximum rise to about 101° F. There were no rigors. On two occasions there were slight transitory fits of about a minute's duration, until on Jan. 12th, the day before death, there were a series of prolonged and violent fits. The cerebro spinal fluid was then withdrawn by lumbar puncture. It was under considerable pressure. Microscopical examination of the fluid, which was quite clear, showed no excess of cells. The Wassermann reaction was not tested. The patient was one of a large family, his father and mother being both alive. Two brothers have been admitted to this hospital previously suffering from rheumatic endocarditis. The W.R. on the father's and mother's blood was performed. It was negative in both instances.

Post-mortem Examination.—Some clear fluid was found in all the serous cavities. The lungs were congested but otherwise normal. The heart was not enlarged; the valves were normal. Just about the tricuspid valves there was a small red swelling about the size of a pea. There was a similar swelling in the wall of the left ventricle. The coronary vessels showed numerous raised and thickened dilatations along all the smaller branches. The main trunks appeared rather thicker than normal, but were not dilated in the manner that the smaller branches were. The aorta was perfectly healthy. The stomach and intestines showed no abnormality, and the mesenteric vessels appeared normal to the naked eye. The liver and spleen, with their vessels, were normal. The kidneys were of normal size. The outer surface of both kidneys was studded with raised irregular whitish patches which resembled, at first sight, growth. On section, both kidneys showed a similar appearance. The cortical region was studded with these patches, many of them irregular in shape, but two were triangular, as is seen in infarcts. The ratio between cortex and medulla appeared normal. The portions of the cortex between these white patches were very deeply congested. The medulla appeared normal. The brain was normal. There was no hæmorrhage to be found and all the cerebral vessels were normal to the naked eye, showing no trace of the nodular appearance seen in the coronary vessels. Drawings of a kidney (Fig. 1) and of the heart (Fig. 2) show these appearances.

FIG. 1.



Showing necrotic patches in kidney.

FIG. 2.

Showing nodular swellings on smaller branches of coronary vessels.

Microscopical Examination.—A detailed description of the microscopical findings, with numerous plates, is given in the publications already referred to. Unfortunately, in this instance only the heart and kidneys were preserved for microscopical examination. Pieces of tissue were fixed in Kaiserling's fluid and embedded in paraffin. Sections were stained with hæmatoxylin and eosin, by Van Gieson's stain, and with methyl violet for amyloid changes. Sections were also stained with Giemsa and Leishman's stain, by the Gram-Weigert method, and by Levaditi's method for spirochætes.

Kidney.—In the necrotic whitish areas there was almost complete loss of structure of the kidney substance. These areas consisted of a mass of granular amorphous material with a faint indication of tubular structure. The epithelial nuclei were almost invisible. Scattered throughout these areas were numerous polymorphs and plasma cells and also numerous small masses of pigment. The zone just outside these necrotic areas showed a very considerable degree of increase in interstitial tissue with fibrosis. There was here considerable hæmorrhage, chiefly between the tubules. Nearly all the glomeruli in these non-necrotic areas were almost obliterated and replaced by fibrous tissue. Here were numerous areas of round-celled infiltration, and as in the necrotic portion there was extensive infiltration with polymorphs and plasma cells. The tubular epithelium was vacuolated and the nuclei stained rather poorly, but in this area the most obvious change was the glomerular one. In those areas, which appeared almost normal to the naked eye, the change, on the other hand, was relatively speaking nearly all tubular. Here the glomeruli were comparatively normal. There was thickening of the capsule and some hæmorrhage into the tufts. Throughout this area there was an intense degree of hæmorrhage, in a few places massive but chiefly between columns of tubules. The tubules in this area were largely denuded of epithelium and a large number were full of casts of hyaline material.

Vessels of the Kidney.—The vessels in general showed little change; there was a certain amount of thickening, chiefly of the media. A number of the smaller arteries were plugged with degenerated masses of red cells. In the necrotic areas a few vessels were seen in which there was an extreme degree of degeneration and inflammation of the coats and the lumen of these vessels was filled with organised thrombus. Sections of the renal arteries showed nothing more than a slight thickening and fibrosis of the middle coat; the other coats were normal.

Heart.—Section of the two small nodules in the wall of the heart already referred to showed them to be organised thrombi. Sections through the nodular enlargement of the small branches of the coronary arteries showed an extreme degree of proliferation and what appeared to be hyaline degeneration of all coats. In places they were not patent but obliterated by a mass of degenerated cells and organised clot. Section stained with Van Gieson's stain showed excessive fibrosis throughout the vessel. In many of the obliterated vessels no distinction could be made between the various coats. Round these obliterated vessels was a mass of small capillaries filled with blood and apparently carrying on a collateral circulation. There was also a considerable degree of perivascular inflammation round the affected vessels. Sections appropriately stained showed no evidence of amyloid degeneration. There was a fibrous myositis of the heart muscle. In none of the sections examined, stained by the various methods employed, were any micro-organisms seen.

Remarks.

The interesting features of this case are the most unusual combination of polyarteritis acuta nodosa with cortical necrosis of the kidney. The pathological findings have been described by others in full detail, and the separate features in this case agree with those already described. That the disease is an acute infection seems obvious from its history and pathology, though so far no cause has been found. It would seem that in this case syphilis can be excluded. The history agrees in many respects with those quoted by Carnegie Dickson. It is curious that the boy should have had almost complete suppression of urine at first, after which a gradually increasing diuresis set in. Another curious feature of the case is that the arterial change was limited to the vessels of the heart, at any rate, as far as naked-eye inspection went. Also it is curious, considering the duration of the disease and the very extensive degeneration of the kidney, that no œdema was present throughout, and it is to be regretted that a chemical study of the kidney function was not performed at frequent intervals during the illness. The sudden onset with very acute pain and hæmaturia, and the absence of œdema, had at the beginning of the illness suggested stone as a possible diagnosis. Later the extreme wasting, the low urea content of the blood, and again the absence of œdema had suggested a neoplasm of the kidney. It is interesting to note that the acute symptoms described by Bamfurth in his case of cortical necrosis in an adult man—viz., the abdominal pain and fever—are in many respects similar to those described in cases of pure polyarteritis acuta nodosa, with the exception of the complete suppression of urine and sudden termination of the illness. The case here brought to notice in many ways is the combination of the symptoms found in the two diseases, and it is interesting to speculate if the pathology of the two is identical and the arterial changes the result of a more chronic type of infection. The case here described possibly offers some evidence for this view.

In conclusion, I should like to offer my thanks to Prof. L. S. Dudgeon for much advice and help in the preparation of this article.

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DONATIONS AND BEQUESTS.—The Chelsea Hospital for Women has received from the executors of the residuary estate of the late Mr. Charles Albert Bannister a grant of £100.

TWO CASES OF BRAIN ABSCESS,

WITH REMARKS ON THE CYTOLOGY OF THE CEREBRO-SPINAL FLUID.

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THE clinical diagnosis of abscess of the brain frequently presents great difficulty, especially in its earlier stages, and an examination of the cerebro-spinal fluid often affords the clinician no positive evidence, for when the fluid is clear, it may show no obvious abnormality, whilst in the final stage, when the abscess has discharged, or is leaking into the sub-arachnoid space, the fluid so closely resembles that of septic meningitis as to be almost indistinguishable from it.

The following two cases of cerebral abscess in children are reported with a two-fold object: first, as illustrating the value of a careful differential count of the cells of the fluid during the stage when this is still clear, and secondly, to put on record their rather unusual morbid anatomy.

CASE 1.—Female, aged 8, who had suffered from chronic suppurative otitis media for two years, was in fair health until seven weeks before her death. She then developed a progressive illness, with a fairly sudden onset, symptoms developing in the following order:—

Condition on Admission.—She was mentally confused, had continual headaches, general tenderness, photophobia, and rigidity of the posterior cervical muscles. No sign was found which suggested localisation of the lesion to any particular region of the brain. Both tympanic membranes were found perforated and 1·5 D. of swelling was found in each optic disc.

Course of Case.—During the first fortnight she developed attacks lasting several hours, during which she became semi-conscious with a meningeal cry, and had frequent vomiting, severe enough to produce ketosis. During the second fortnight the bouts of semi-consciousness became longer, and she was more difficult to rouse. Kernig's sign appeared. The patient developed an acute coliform cystitis, which rapidly progressed. During the third fortnight signs of pyelo-nephritis developed, and she was found to have slight œdema of the face. During most of the day she was semi-conscious, and for hours at a time she could not be roused. During the last week she had several convulsions with rigidity of the left arm and twitching of the face and limbs. The renal complication progressed rapidly, giving rise to high fever and considerable emaciation.

Cerebro-Spinal Fluid.—Two days after admission a lumbar puncture withdrew clear fluid under moderately increased pressure, having the following characters: clear, even when illuminated from the side by strong light against a black background; colourless, against a white background; contains 12 cells per c.mm., 70 per cent. of which are polynuclears. Total albumin and sugar content within normal limits.

A tentative diagnosis of cerebral abscess (approaching the ventricular system or the sub-arachnoid space) was made from the above finding in conjunction with the clinical signs. Fourteen days after this examination the fluid was again examined with the following result: Fluid still clear and colourless; cells, 40 per c.mm., 80 per cent. of which are polynuclear; total protein, 0·06 per cent. (normal upper limit 0·03 per cent.); dextrose, within normal limits. A week later the fluid was slightly opalescent by strong indirect illumination, but not coloured. It contained 250 cells per c.mm., 60 per cent. of which were polynuclear, whilst a fortnight before death the fluid was obviously opalescent and contained 580 cells per c.mm., of which 70 per cent. were polynuclear, its sugar contents remaining within normal limits.

Post-Mortem Examination.—A small abscess (about the size of a pea, containing thick yellow pus) was found in the substance of the optic thalamus. Its boundaries were well defined, but there was no well-formed capsule. At its inner edge a reddish streak led from the abscess towards the lateral ventricle. On section this streak proved to be thalamic tissue, heavily infiltrated by leucocytes, the majority of which were polynuclear. At the edge of the abscess and localised to its edge were many granule cells loaded with lipoid. At the periphery of the abscess the cells stained well; at its centre cell-staining was absent. A few masses of Gram-positive cocci were found in the film of the pus. No organism was found on culture. Tubercle bacilli were not found. A small cholesteatomatous mass was found lying on the postero-superior surface of the petrous temporal bone just internal to its junction with the squamous temporal. Both middle ears contained thin pus. No sign of temporo-sphenoidal meningitis or thrombo-phlebitis was found. The mastoid cells were normal. The immediate cause of death was acute hæmorrhagic cystitis and consecutive pyelo-nephritis.

CASE 2.—Male, aged 12, had pneumonia and an empyema at the age of 7, from which he apparently made a complete recovery. He was considered to be in normal health until two and a half weeks before his death. About this time he had headache and vomiting for four days, and wandered a little at night. He became drowsy and irritable. A week before his death he had four epileptiform convulsions during the course of 24 hours, and following this he developed ptosis of the right eye and very marked stiffness of the posterior cervical muscles. He gradually became semi-conscious and later comatose. He died after a series of convulsions. No sign of aural disease was found, but well-marked papilloedema was present in both eyes. Whilst in hospital his temperature varied between normal and 99° F.; the pulse between 56 to 88. No sign was found to localise his cerebral condition.

Cerebro-Spinal Fluid.—Eight days before his death, when the clinical diagnosis was in considerable doubt, lumbar puncture withdrew fluid under considerably increased pressure, having the following characters: Clear with strong illumination, and colourless against a white background; 12 cells per c.mm. Differential count: 75 per cent. polynuclear, 20 per cent. "gitterzellen," 5 per cent. small lymphocytes. Total protein, 0·045 per cent.; chloride and sugar contents within normal limits. A cerebral abscess was suggested as the cause of the symptoms, chiefly on the analogy with Case 1, and five days later another sample of fluid gave the following result: Colourless; a fine opalescence by strong indirect illumination; 48 cells per c.mm. Differential count: 40 per cent. polynuclear, 30 per cent. "gitterzellen," 30 per cent. lymphocytes. Total protein 0·06 per cent.; sugar and chloride within normal limits.

Post-Mortem Examination.—The right pleural sac was obliterated. The right lung showed collapse and fibrosis of long-standing. Leading into its lower part three dilated bronchial tubes were found, whose mucous membrane was thickened, reddened, and velvety. A large abscess was present in the right frontal lobe of the cerebrum, replacing most of the anterior and inferior parts of the lobe, and pushing back and compressing the head of the caudate nucleus. It had not ruptured, but there was a patch of localised meningitis at the frontal pole, and the ventricular wall was obviously softened and infiltrated anteriorly.

Remarks.

In both these cases a cerebral abscess was found post mortem which had not discharged its contents into the ventricular system or sub-arachnoid space. The cerebro-spinal fluid was first examined, in each case at a time when it was absolutely clear, and when the clinical diagnosis was doubtful. At this time, in each case, the cell count was found to be 12 per c.mm. Even when one bears in mind the constancy of the cell count in normal spinal fluid, and the accepted fact that any figure over 5 per c.mm. constitutes a pathological increase, it is difficult to persuade oneself, when searching for a diagnosis at the bedside, that an increase of 7 cells per c.mm. has any great weight. The cell count of these fluids was less striking, however, than the fact that the cells responsible for the increase were polymorphonuclear leucocytes and foreign to normal spinal fluid, whilst the steady increase in the numbers of these cells during the progress of each case justified the importance attached to their presence when their numbers were so few.

In both cases it happened that a diagnosis of cerebral abscess was suggested without any knowledge of the clinical facts of the cases, but no claim is made that the presence, in a non-meningitic and blood-free spinal fluid, of polynuclear leucocytes, is alone diagnostic of abscess. All experience is against basing a clinical diagnosis on the result of an examination of this fluid alone, but it seems probable that, if a careful differential count of the cells shows the presence of polynuclear leucocytes even in small numbers, we have evidence of considerable positive value. It is generally taught that if, in a case with symptoms of acute cerebral irritation and pressure, a moderate degree of pyrexia, and a leucocytosis in the blood there are no changes in the spinal fluid,

the strong presumption is that the condition is one of intracranial abscess.

It is likely that a careful differential count of the cells of the spinal fluid in many such cases would show a slight polynuclear pleocytosis and afford evidence of a positive nature which must always be of greater value than the negative characters of the fluid on which it is usual to base the diagnosis of abscess in its early stages.

A cerebral tumour, producing a vascular reaction in the meninges of the surface of the brain, may give rise to slight pleocytosis in a blood-free, non-meningitic fluid, and the cell increase may be due to a predominance of polynuclear leucocytes. In some cases the combined clinical and pathological evidence will not be sufficiently strong to differentiate abscess from tumour. In two cases of frontal tumour, recently observed, in which a vascular reaction was present in the soft membranes overlying the tumour, slight pleocytosis was found in the fluid and a high percentage of polynuclear cells, but in each case the fluid, when viewed in a strong light against an opaque white background, was unmistakably tinged yellow.

A spinal fluid which is clear and contains glucose and chloride in normal amounts is usually accepted as being non-meningitic, and it seems likely that, in cases more favourable to surgical interference than those quoted, the discovery of even a slight polynuclear pleocytosis in a colourless, non-meningitic, and absolutely blood-free fluid, especially if confirmed by repeated examinations at short intervals, may be of considerable service in diagnosis and treatment.

I am indebted to Dr. J. Odery Symes and Dr. Newman Neild, physicians to the General Hospital, Bristol, for permission to use their clinical records of these cases.

Clinical and Laboratory Notes.

A CASE OF MINOR SURGERY OF THE HAND.

BY J. W. TOMB, O.B.E., M.D., D.P.H. DUB.

WITH reference to the leading article on the Treatment of Infections of the Hands in THE LANCET of August 18th, and to the observation at the discussion on the subject at the annual meeting of the British Medical Association at Portsmouth that in women, for æsthetic reasons, every effort should be made to avoid disfigurement, I desire to place on record a case of minor surgery of the hand which though traumatic and not infective in origin will, I hope, prove of interest in this connexion.

One evening while the writer, who at the time had just qualified, was on accident duty in hospital, a female child of about 5 years of age was brought by her mother into the out-patient department suffering from an injury to the right index finger. On examination it was found that the terminal phalanx had been completely severed through the joint with the exception of a narrow strand of skin and tissue on the inner side by which the phalanx was still hanging to the rest of the finger. To have snipped through the connecting skin and tissue with a pair of sterilised scissors would have been the work of an instant, all bleeding having ceased, but as it was the right hand which was involved and the child was a girl, it appeared to the writer that a desperate effort should be made to save the phalanx on the chance that though almost completely severed and at the time both cold and to all appearance dead it might be able to be kept alive artificially in warm saline solution until the blood-vessels in the connecting strand of tissue had had an opportunity to increase in size if possible sufficiently to provide for the permanent nourishment of the part.

The hanging phalanx was accordingly brought into line with the rest of the finger and retained roughly in position by three stitches one on each of the severed sides. The finger was then bandaged and the child's mother instructed that she must remain awake all night and while the child slept must keep the bandaged finger continuously immersed in a bowl of warm saline solution—to be made by adding a teaspoonful of salt to a pint of warm water. She was further instructed that she must on no account allow the temperature of the water to fall bel ow blood heat, and that on her zeal depended whether or not the child's finger was to be saved. She was also instructed to bring the child back to hospital for inspection the following morning so that the phalanx could be removed if dead.

On the child being brought back next morning, though the part was still cold, blanched, and apparently lifeless, it was not possible to state categorically that it was dead, and so after re-dressing the finger the mother was again instructed to carry on the same treatment continuously during the succeeding 24 hours and to bring the child back for re-inspection the following day. On the child being brought for re-inspection it was at once evident by the change of colour in the part that the circulation was succeeding in re-establishing itself, and that the blood-vessels in the original connecting strand of tissue were in all likelihood going to prove sufficient for the future nourishment of the part. The finger was re-dressed and further anxiety regarding the immediate progress of the case laid aside.

The after-history was uneventful, the phalanx "growing on" again without suppuration, leaving a finger of normal appearance but with a stiff distal joint.

Asansol, Bengal.

A CASE OF UNUSUAL HÆMORRHAGE FOLLOWING A RADICAL MASTOID OPERATION.

BY H. LAWSON WHALE, M.D. CAMB., F.R.C.S. ENG.,
OTO-LARYNGOLOGIST, HAMPSTEAD GENERAL AND LONDON TEMPERANCE HOSPITALS.

THE following case is recorded because dangerous bleeding after a radical mastoid operation must be happily rare in the experience of any aurist.

At the Hampstead General Hospital on July 5th, 1923, I performed what appeared to be a very ordinary radical mastoid operation on a male aged 23. There was no history of hæmophilia, and during the removal of the patient's appendix six months earlier there had been no notable bleeding; moreover, his coagulation-time had then been found normal. During the mastoid operation there was no excessive hæmorrhage. The most frequent site of active bleeding is a point deep to the lowest part of the concha—the spurt coming from a large branch, or more rarely the main trunk, of the posterior auricular artery—when the meatal flap is cut. But in the present instance even this stage of the operation gave no trouble.

On the evening following operation, and again on July 6th, 7th, 10th, and 11th, the cavity repeatedly filled with blood, soaking the dressings. On the 6th the post-aural stitches were removed, and on this and each subsequent day when bleeding occurred the cavity was re-packed, this proceeding involving a considerable loss of blood. On July 7th, under a light general anæsthetic, deep under-running sutures were inserted at the lowest part of the wound, to control the bleeding area. Between the 5th and 11th injections of hæmoplastin, subcutaneous and rectal salines, and calcium lactate by mouth, were consistently given with no avail.

On July 12th, one week after the operation, his general condition was extremely grave. A general anæsthetic was given; on removal of the packing there was a free intractable ooze of blood. The edges of the wound by now resembled sodden blotting-paper, and obviously no ligatures nor under-running sutures would hold. I therefore tied the external carotid (which arose from a high bifurcation close to the parotid gland) through a clean incision.

The subsequent history was one of slow but uneventful recovery.

Wimpole-street, W.

THE "ETERNAL (PLASTIC) TRIANGLE."

A SIMPLE CURE.

BY H. D. GILLIES, C.B.E., F.R.C.S. ENG.,
SENIOR SURG., QUEEN'S HOSPITAL FOR FACIAL INJURIES, SIDCUP.

THE problem of suitably closing small triangular gaps, or of fitting triangular points of skin into V-shaped spaces, must be of very common occurrence to all surgeons engaged in plastic or reparative work. However carefully suturing by the ordinary methods is carried out, some small residual triangle usually results and the more numerous the sutures used in the attempt to obliterate this the more is trouble from local necrosis likely to ensue. Reference to the

THE "ETERNAL (PLASTIC) TRIANGLE."

FIG. 1.

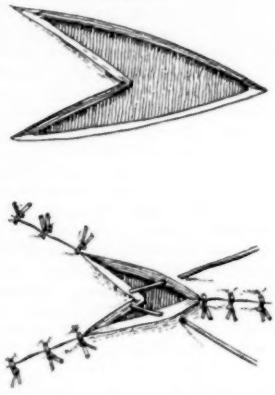


FIG. 2.

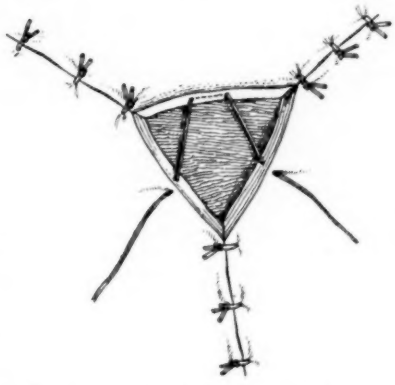
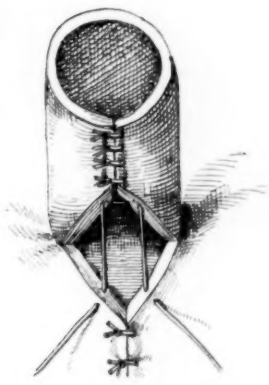


FIG. 3.



accompanying diagrams will make clear a method which has given absolute satisfaction in such cases.

Fig. 1 illustrates the way in which the point of a triangular flap is picked up subcutaneously by a skin suture passing between the other two sides, while Fig. 2 illustrates how one side of a triangle is similarly treated. Care must be taken to see that the points at which the needle penetrates the cut *edges* are all at the same depth from the skin surface. Fig. 3 illustrates the application of the same principle to the closure of the quadrilateral space at the extremity of a tube pedicle flap.

Portland-place, W.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF PATHOLOGY.

A MEETING of this section was held on Oct. 16th, when Dr. JAMES YOUNG read a paper, illustrated by micro-photographs, on

Further Observations on the Ætiology of Malignant Disease and the Leukæmic Phenomena.

He stated that in cancerous tissue there were rounded or oval yeast-like bodies which could be seen to germinate when the tissue was incubated. Whilst adapted to the living tissue they were ill-adapted to the test-tube and became rapidly changed into elements suited to the new environment. In this way a cocco-bacillary flora was obtained which was easily stabilised on the laboratory medium. During its germination the yeast-like body became pale and in the "plasm" minute granules appeared which subsequently enlarged into the familiar flora. Thin threads and filaments frequently appeared as an intermediate phase. Dr. Young had long believed that the organism locked up in the cancerous tissue had the characters of a fungus. He described a fungus which he had obtained from seven cancerous tumours. This was stable on a dry medium, possessing branching hyphæ and conidia, but in a fluid medium was extremely unstable and rapidly broke down into cocco-bacillary elements. During the process yeast-like, "plasm," and filamentous phases were common, and in every detail the morphological picture found in the incubating cancerous tissue was reproduced. Injection of the bacillary phase of the organism obtained from mouse cancer produced in mice a diffuse and progressive neoplastic lesion (pseudo-leukæmia or lympho-sarcoma) in which the organism appeared not in the form of the bacilli injected but as yeast-like elements. By incubating the affected tissues these rapidly became transformed into cocco-bacillary elements and the morphological process was again similar to that in incubating cancerous tissue. Dr. Young submitted that the investigations of Hort, Löhnis and Smith, Mellon, Almquist, Reid and Orr, de Negri, and others had proved beyond doubt the varying morphology possessed by familiar laboratory bacteria, which were to be looked upon as stabilised phases of organisms which in other conditions of growth possessed "plasm" and blastomycete characters. Dr. Young said that the organism used for his experimental injection was a lactose fermenter, belonging to the *Bacillus coli* group. From the chronic lympho-sarcomatous lesions, on the other hand, in the majority of cases a non-lactose fermenter belonging to the Salmonella group was obtained. The original organism produced a slowly progressive neoplastic lesion, the latter produced an acute, rapidly fatal lesion, although in its gross anatomy this might resemble the other. The sequence of the experiment implied clearly that the non-lactose fermenter was a secondary invader or that it was a mutant. If the latter were true it meant that cancer and the leukæmic phenomena were linked up with the typhoidal infections. In this connexion it was striking to note that the typhoidal lesion was essentially proliferative and might possess true malignant properties (Mallory) and that the possibility of the leukæmic phenomena being related to the typhoidal infections had already been mooted (Ewing). Dr. Young gave reasons for his belief that in the healthy animal the only cells that could after infection proliferate in a tumour-like fashion were the primitive cells. This finding had a striking analogy in the parasitic tumours of plants. It explained the leukæmic phenomena and at the same time the difficulty of producing cancer by artificial infection. It had long been recognised that a lengthy preparation of the mature cell was necessary for cancer to occur, and Dr. Young described experiments supporting his view that chronic irritation (tar, soot, heat, X rays, &c.) operated by throwing the mature cell back to the primitive state when alone infection would produce cancer. In each of four experiments comprising in all 152 mice, the animals were divided into two batches. One lot was vaccinated with the organism of the research, the other was kept as controls. All the animals were painted with tar twice weekly. The results were: After seven months in 76 controls there were 25 tumours, whereas in 76 vaccinated animals there were only five. These experiments supported the view that tar cancer was due to infection of damaged cells by an organism which was a common denizen of the laboratory cage.

Dr. E. H. KETTLE gave a communication on

Experiments with Defatted Tubercle Antigen.

He said that on analysing Prof. Dreyer's original

paper it seemed that the claim that the new antigen was efficacious in the treatment of tuberculosis rested mainly upon the treatment of four guinea-pigs which had been infected with a strain of tubercle bacilli of low virulence. The evidence that the course of the disease was favourably influenced by the treatment was: (1) the increase in weight of the animals; (2) the diminution in size or disappearance of palpable lesions; and (3) the fibrosis and scarring of lesions in such animals as died. Dr. Kettle's experiments showed that these changes could occur naturally in guinea-pigs infected with tuberculosis without any treatment at all; further, that the most intense sclerosis and scarring of tuberculous lesions in one part of the body might be associated with the rapid progress of the disease elsewhere. Dr. Kettle's attempts at treatment of guinea-pigs had been carried out with an antigen (No. 58) given him in June by Captain S. R. Douglas, F.R.S., who had himself received it from Prof. Dreyer. Recently Captain Douglas had reached the conclusion that this particular batch of antigen was unsatisfactory, and that no great reliance could be placed on the results obtained therewith. Dr. Kettle said that the results of his own experiments were in any case ambiguous; some of the animals showed healing of lesions, but this was associated with active progress of the disease elsewhere. The general conclusions arrived at by him were that in view of the nature of the lesions to be seen in his control animals, which were demonstrated, the efficacy of the antigen in the treatment of tuberculosis in guinea-pigs had not been established; and that in view of the natural healing which tends to occur in these animals, comparable to the changes familiar in human pathology, much sharper reactions must be obtained before the value of any antigen could be considered as demonstrated experimentally.

Dr. J. FREEMAN made a communication on

Pollen Antigen Prepared by Dreyer's Method.

He said that it seemed interesting to try whether Dreyer's technique for the defatting of bacterial vaccines preparatory to constructing an antigen from them would prove a useful method for the defatting of grass pollen before extracting an antigen from it. The interest lay in the fact that the strength of the grass pollen antigen could be very accurately determined by suitable experiments on the skin of sensitive—i.e., hay-fever—subjects. For years the process of defatting the pollen before extraction had been carried out regularly, and it had only essentially differed from the full Dreyer technique in that there had been no initial fixing with formalin. This was, of course, the one point in which Dreyer's technique had differed from the previous work of Captain Stewart Douglas. Five grammes of pollen were extracted by Dreyer's method, and two other specimens of 5 g. were extracted as controls, one of them in exactly the same way as the Dreyer method minus the formalin, the other in the more usual manner of the laboratory. The preparations were tested on a number of patients and on a number of different occasions. The extract made according to Dreyer proved itself to be from 200 to 1000 times weaker than the other extracts. This would suggest that either the antigen was extracted in the formalin, or else that the formalin combined with and spoilt the antigen. If anything comparable happens in connexion with the tubercle bacilli it showed that the Dreyer defatted vaccine was very much weaker than the bacillary emulsion, which to Dr. Freeman's way of thinking might very well be consistent with its being more effective.

SECTION OF DERMATOLOGY.

A SPECIAL meeting of this section, to which members of the Neurological Section were invited, was held on Oct. 18th, Dr. E. G. GRAHAM LITTLE, the President, being in the chair, to hear an address by Prof. J. A. FORDYCE, Columbia University, New York, on

Results of Treatment of Syphilis of the Nervous System.

Prof. Fordyce said that observations as to the final results of incompletely cured cases of early neuro-syphilis had led his colleagues and himself to carry out a rather extensive and prolonged study as to the probable relationship of the early types to the late degenerations. As a result, they were led to believe that the incidence of incurable types might be reduced to a minimum by proper diagnosis, treatment, and control of early cases. Only within the last ten years had it been shown how frequently the spirochætes enter the nervous system during the period of their dissemination by blood and lymph; it was found that fully 25 per cent. of all syphilitics presented clinical or laboratory evidence of involvement of the nervous system in the first year of infection. Many clinical observations were on record in which patients with late syphilis of the nervous system reported the occurrence of ocular palsies, bladder and rectal disturbances, paræsthesias, changes in the deep reflexes, and other signs of early implication. These symptoms regressed under treatment, but usually recurred in a more pronounced manner until a well-defined type was established. He had been able to follow the life-history of several patients from the early months of their infection with positive evidence of cord and brain syphilis, until the development, some 20 years later, of typical tabes and paresis. In cases in which modern therapeutic methods had been employed and controlled by spinal fluid examinations, cures without relapses had been achieved. His colleagues and himself had been able, in their private and publ work, to control, by clinical observation and laboratory tests, so-called cures in many patients treated in a routine manner during the early infection, and he was convinced that the large majority whose nervous systems were implicated at that time, retained the infection, though symptoms might temporarily disappear and the blood Wassermann become negative. Failure to control the infection in the central nervous system, by systematic spinal fluid tests, led to the persistence there of residuals which later became activated. Longer use of the arsphenamine preparations intravenously, if their effects were controlled by fluid examinations from time to time, cured certain types of early and late neuro-syphilis. On the other hand, they had had cases in all stages of the infection which failed to respond to drugs by the ordinary channels, but rapidly yielded to combined intravenous and intraspinal injections or to intraspinal treatment alone.

Obviously, any prophylactic measure which might prevent or lessen the incidence of neuro-syphilis, should receive serious consideration; if lumbar puncture were limited to cases with obtrusive signs, irreparable damage might result. In over 1000 cases of syphilis in which lumbar punctures were made in his clinic, 38 per cent. showed positive findings in the first two years. In one group there was a relatively low cell count, a slight excess of globulin, a positive Wassermann reaction in the low dilutions, and a luetic gold sol. curve. The minor cases were amenable to routine treatment; they did not progress, and there were only slight nerve signs. In other groups of cases the most frequent symptoms were headache, vertigo, insomnia, nervousness, pains in the extremities, phobias, and inability to concentrate. Optic and auditory nerves were occasionally found to be involved, also pupillary irregularities, and deep reflex alterations. Several malignant cases were encountered, giving the picture of an acute meningitis, and some of these ended fatally. Experience had shown that in these malignant cases it was best to begin treatment with small doses, and relieve the pressure by spinal drainage, before proceeding to energetic measures. He and his colleagues believed that the nervous system might continue to harbour spirochætes, and yet all tests might be returned as negative. Still, these exceptional cases did not alter the general rule that the spinal fluid reflects the pathological processes in the brain and cord, and enables a differentiation to be made from non-syphilitic affections giving a similar clinical picture.

The nervous system might for years be the habitat of the spirochætes, and show little or no tissue reaction until a traumatism or other excitant stimulated their activity. A slight character defect, loss of ambition, forgetfulness, irascibility, mental depression, neurasthenia, often preceded for years the final stages of the paresis. The number of cases of syphilis of the nervous system was much greater than statistics revealed, as the figures were based on cases showing the classical syndrome.

A comprehensive re-study of the symptomatology in correlation with the findings in the laboratory they had found to be necessary before a rational prognosis could be made, and a logical treatment devised and carried out. The absence of the paretic gold sol. curve, in most of the cases, definitely excluded paresis. All who had wide experience in syphilis occasionally met with a patient presenting typical Argyll Robertson pupils, absent knee-jerks, with minor sensory disturbance, and but little disturbance in gait, and in the cases of the kind examined the blood and all the findings in the spinal fluid were negative, and had remained so for several years. The possibility of the arrest of tabes by the ordinary routine treatment, or by the defensive forces of the body should encourage practitioners in their therapeutic efforts. In a clinical and serological analysis of 442 cases of neuro-syphilis in his private work during the past ten years, 156 patients with tabes were investigated, 50 of them in an early stage, with incomplete findings of posterior column involvement, while 106 were sufficiently advanced to give the classical symptoms. In 70 per cent. the Wassermann reaction was positive in the blood, and—with one exception—positive in the fluid when larger quantities were used in the test. Twenty-five per cent. had a paretic gold sol. curve, and 75 per cent. a luetic one. The cell count varied from normal to 350. Of these cases, 30 had been re-examined, and had remained free of symptoms on serological examination for from one year to nine years. Thirty-seven cases were not re-examined; in addition, 68 cases showed marked clinical improvement. The larger number of cases of neuro-syphilis were referred to Prof. Fordyce by physicians who had treated them more or less intensively in a routine manner with salvarsan and mercury, without antecedent fluid examination, so it was not always possible to know the extent to which the fluid findings were influenced by intravenous treatment alone. In the case of patients who had become intolerant to salvarsan intravenously, they had been obliged to employ intraspinal treatment with serum obtained from another treated patient. In this way proof of its spirochæticidal action was obtained, uncomplicated with other factors. Dr. Swift had given him the history of a typical case of tabes treated by Dr. Ellis and Dr. Swift in 1913, by serum intraspinally, without intravenous injections. He was examined ten years after his last treatment, and his fluid findings were both negative, and his tabes had not progressed. The definite response of certain types of neuro-syphilis to intraspinal treatment after failure of the prolonged use of the intravenous route was confirmed by long clinical experience and by careful laboratory control. Persistent intraspinal treatment when indicated by the fluid findings could often preserve useful vision in optic atrophy resulting from basilar meningitis. He gave detailed statistics of the ocular cases which had come under his care.

For the purposes of comparative study, he and his colleagues had grouped their 442 cases under the following tentative diagnoses, based on the clinical and the laboratory findings: (1) Secondary neuro-syphilis; (2) vascular and meningo-vascular; (3) pre-tabes or *tabes imperfecta*; (4) tabes well developed; (5) optic atrophy and general paralysis. 365 of the 442 cases had been examined from one to ten years after treatment was discontinued. Nineteen cases of secondary neuro-syphilis were treated intraspinally because of the persistence of their symptoms and the fact that there were fluid findings after from one to three courses of salvarsan given intravenously and mercury intramuscularly. Wassermann was positive in all cases, either in the blood or the fluid; in a large majority in both. The cell-count ranged from normal to 940. Five of the 19 cases received more than one course of combined intravenous and intraspinal treatment; eight had more than two courses; five had more than three courses. One patient, who was sensitised to salvarsan intravenously, was treated intraspinally only, and received 67 injections before securing a cure. In all the 19, the headache, insomnia, vertigo, aphasia, and facial palsy disappeared. Those which had marked tendon and pupillary changes had them still. In every case the reaction became negative in the blood, and in only two cases remained weakly positive in the fluid. The 17 patients who were serologically negative, had remained so for from 18 months to six years. Under vascular and neuro-vascular and neuro-syphilis he had included 139 cases which came under observation after two years from the primary infection, the signs being too indefinite to place them in the tabetic or paretic groups. In 25 the reaction was negative in the blood, and the diagnosis might have been missed if a complete examination had not been made. Sixteen had a negative reaction. Intraspinal treatment was used only when the fluid findings were positive. The speaker showed by a series of tables that the number of cases considered to be cured became progressively less with the age and the type of the infection. Of 116 cases of paresis treated intensively, 39 died, 30 had passed from observation, and 47 were known to be still living. He could not report any cures, though remissions were induced in 46 patients, the intervals lasting from a few months to several years.

Before he left New York treatment had been begun with the new arsenical preparation tryparsamid in a number of paretics; he could not yet pronounce as to its value. A preliminary drainage was not essential, and only the quantity of spinal fluid necessary for the tests had been removed in the cases under his care. Into the receptacle attached to the spinal puncture needle, 30 to 40 c.cm. of fluid was allowed to accumulate, and to this was added the inactivated serum. The mixture was then allowed slowly to re-enter the subarachnoid space by gravity. Thus, about one-third of the entire quantity of spinal fluid was mixed with salvarsanised serum before its reinjection. Half an hour after the preliminary intravenous injection was, they found, the best time for removing the blood. This was permitted to clot overnight in the ice-box; next morning it was centrifugalised and the serum pipetted into a sterile tube. This was repeated to remove all red cells, and the clear serum pipetted into another tube and heated for 30 minutes at 56° C. The intervals were never less than two weeks, and were gradually lengthened until six or eight injections had been given. Six weeks to two months were allowed before a second series was commenced. Numbness in buttocks and genital organs, with difficulty in urinating, must be taken as indications to discontinue the treatment, or at least observe longer intervals between injections.

Conclusion.

Prof. Fordyce summarised his conclusion as follows: Mostly, the central nervous system is invaded during the general dissemination of the virus. Often it was checked, seldom cured, by the usual therapeutic methods. Late neuro-syphilis is not due to reinfection from foci outside the nervous system, but to long persistence *in loco* of the infecting organism. If the nervous system was not involved early in the infection, probably it would not be involved later; this with the exception of vascular lesions and gummata. In the presence of a persistent Wassermann, the possibility of a nervous system lesion should be remembered. Treatment should not be stopped without information from lumbar puncture. Certain types of nerve syphilis were more rapidly controlled by combined intravenous and intraspinal treatment, and sometimes only by this

method. In general paralysis remissions of long duration were achieved which were more striking in patients with a pronounced meningeal reaction. Cures could not be attained by any existing treatment.

Discussion.

The PRESIDENT expressed the warm thanks of the meeting to Prof. Fordyce for his valuable address.

Dr. JAMES COLLIER said Prof. Fordyce saw cases at an earlier stage than seemed the general experience in this country, and the lecturer and his colleagues treated the cases from the moment they appeared, even before they showed neurological symptoms. He heartily agreed with the view that invasion of the nervous system occurred in very early days. It was remarkable how long the virus might remain latent. One case he knew acquired the disease at 18 years, and his first neurological symptom supervened at the age of 61. He would like to know how soon after primary infection tabes might develop; he had known cases in which virulent and progressive degeneration of the nervous system occurred within a number of months after the primary infection. Prof. Fordyce seemed to have attained amazingly favourable results. Optic atrophy from gumma on one side was often arrested, but he had never known a slow diminution of vision from neuronic degeneration cured.

Prof. F. R. FRASER agreed that the results obtained by Prof. Fordyce in New York were largely due to the very thorough treatment he had carried out. Many workers maintained that the results of lumbar puncture combined with intravenous injections were good without the intraspinous use of salvarsanised serum as well. Two series treated by the two methods would form an interesting comparison. The lesson of the address was a definitely valuable one, as he felt sure the general profession did not sufficiently appreciate the early involvement of the nervous system by syphilis.

Dr. ELLIS considered the work detailed by Prof. Fordyce to be one of the biggest presentations on the subject he had ever heard. When a man said intravenous treatment did not benefit neuro-syphilis, it could generally be safely assumed that he had been giving an inadequate amount, and so with other treatments. And here the thorough treatment of these cases was a question of man-power; the amount of work for each man to look after in our hospitals was much greater than in New York. There was very strong probability that dissemination of the virus to the nerve and other structures took place during the period of septicæmia. In his own original series all the cases which resisted treatment and in whom the signs of infection persisted had since died.

Dr. G. RIDDOCH referred to rare cases in which, though the clinical and serological tests became negative, the patient continued to go downhill; these required serious investigation. He had great praise for Prof. Fordyce's work and the extraordinarily good results he had achieved.

Dr. J. H. SEQUEIRA said the work done long ago by Head, Fearnsides, and others, showed that the spinal cord and brain were affected in very early stages of syphilis; and all the available knowledge showed how important it was to commence treatment for syphilis at the earliest possible moment. It devolved on all in charge of syphilis clinics especially to take the lesson to heart. By attention to the points insisted on by Prof. Fordyce, there was hope that the greater part of neuro-syphilis might be stamped out.

Dr. H. MACCORMAC remarked that it might be said the neurologist saw the failures of the dermatologist in this disease. In his own clinic all the cases of early syphilis were examined in regard to the cerebro-spinal fluid, and in most cases this fluid showed no evidence of the disease after a complete course of treatment; yet it did not follow that at a later period they would not show some of the remote sequelæ. This contribution should encourage dermatologists to persist in the treatment longer than they did at present.

Dr. WILFRED FOX combated the statement sometimes heard that neuro-syphilis was produced by instituting more active treatment.

Dr. A. M. H. GRAY also thanked Prof. Fordyce for his contribution, and dealt with the proportion he gave of secondary cases in which there was evidence of neuro-syphilis, comparing that with the figure obtained in pre-salvarsan days.

Prof. FORDYCE briefly replied.

MEDICAL SOCIETY OF LONDON.

EXHIBITION OF CASES AND SPECIMENS.

A CLINICAL evening of this Society was held at 11, Chandos-street on Oct. 22nd, with Dr. HERBERT SPENCER, the President, in the chair.

Pituitrin in Diabetes Insipidus.

Dr. BATTY SHAW showed two cases of diabetes insipidus, illustrating the value of treatment by hypodermic injections of pituitrin. The first, a man, had been passing as much as 18 pints of urine a day for a considerable period before he sought advice. There were no signs of nervous lesion, an X ray of the skull showed no change in the pituitary fossa, and the metabolism was normal; 2 c.cm. of pituitrin a day administered hypodermically had reduced the urine output to almost normal dimensions, but its use had been followed by multiple subcutaneous abscesses, thrombosis, and infarction of the lung from which the patient was now happily recovering. The second case, a female, was interesting, as in this case the polyuria had followed a definite glycosuria which had now disappeared; 1 c.cm. of pituitrin daily was sufficient to control the symptoms in this case.

Dr. K. S. HETZEL, who continued the description of the cases, said that in both cases the blood-sugar was raised, but there was no glycosuria. The basal metabolism in the first case was lowered as was the rule when the disease was well established, and in the second case, which was of recent origin, was raised 18 per cent. The action of the pituitrin was apparently on the kidney.

Dr. F. J. POYNTON had treated a child, aged 11, who was passing 280 oz. of urine a day and was really very ill, with pituitary extract with great benefit. Pituitary extract was useless unless given hypodermically.

A Case of Cerebral Tumour.

Dr. G. RIDDOCH showed a woman, aged 32, who had exhibited a left hemiparesis and hemianæsthesia, with headache and vomiting during each of her five pregnancies in the last eight years. In August this year, when she was admitted to the gynæcological wards of the London Hospital for the sequelæ of a miscarriage, these symptoms were again present. Examination revealed papillœdema and constriction of the visual field on both the nasal and temporal sides, especially marked on the latter. The urine was normal. An X ray examination showed a normal sella turcica, but there was a change in density of the picture in the region of the anterior clinoid process. Since then the hemiparesis and anæsthesia had disappeared almost totally, but the visual defect and headache remained and the patient was becoming obese, having put on a stone in weight since being discharged from hospital. He thought there could be little doubt that there was a cerebral tumour; the case exhibited well the exacerbations and remissions which might occur in the progress of this disease.

Carcinoma of the Pharynx.

Mr. E. D. D. DAVIS showed drawings of five cases of carcinoma of the pharynx: (1) an early epithelioma of the base of the tongue; (2) an advanced excavating ulcer of the base of the tongue; (3) an early pyriform sinus epithelioma; (4) an early post-cricoid carcinoma, the larynx in this case had been excised by Mr. E. B. Waggett; and (5) an advanced post-cricoid epithelioma from a woman aged 38. It was

curious that the pyriform sinus epithelioma was almost confined to the male sex, while the post-cricoid epithelioma was seldom seen except in comparatively young women whose symptoms were too often attributed to hysteria before the secondary glandular enlargement in the neck revealed the true nature of the case. Laryngoscopic examination was often very difficult, but these growths could easily be reached and felt by the finger. Mr. Davis also showed a radiogram of a pharyngeal pouch filled with a bismuth mixture, and gave an account of the case and the operative treatment employed.

Mr. ARTHUR EDMUNDS had also found the finger the most reliable guide to the diagnosis of pharyngeal growths; this examination was best made under general anæsthesia.

In answer to a question by the PRESIDENT, Mr. DAVIS said that radium, while cleaning up malignant ulcers of the pharynx and rendering life more comfortable for a time, had no curative effect. At least 200 milligrams should be employed for this purpose.

Acholuric Jaundice.

Dr. POYNTON showed a young woman, a case of this congenital disease, who had been under observation for 20 years. In the case shown fragility of the red blood corpuscles had never been demonstrable, although it was well marked in two other members of the same family who suffered from the same disease. The spleen was much enlarged. He showed her with a view to obtaining opinions as to the advisability of splenectomy.

Dr. HERBERT FRENCH thought the spleen should have been removed ten years ago, before the patient had come to her present low condition and the spleen to its very large size which rendered operation very risky. He had had a case of the same kind in a boy who, before splenectomy, was too ill even to attend school. After the spleen had been removed he recovered so well as to be able to serve abroad throughout the war; he was now married and had two children.

Dr. PARKES WEBER knew of a family similarly afflicted. One of the male members served abroad for some time, but had a relapse. Splenectomy was eventually performed and he recovered. On the other hand, the grandfather, who suffered similarly, lived to 74 without any operation. As the result of his observations in South Germany, where Perthe had obtained admirable results from splenectomy, he would now feel inclined to advise operation in selected cases when the services of a surgeon experienced in this operation were available.

Dr. POYNTON, in reply, said that ten years ago the patient was not under treatment—in fact, she had only presented herself on four occasions during 20 years for relapses, apart from which the patient was able to carry on her work. An elder brother had been able to work with a red blood count of only 1,700,000, and a sister of 30, who also suffered even more severely, had improved after marriage and had a healthy child. Under these circumstances he was averse to advising operation merely on account of the pain due to the spleen.

Congenital Heart Disease.

Dr. T. JENNER HOSKIN showed a girl, aged 8, who suffered from breathlessness on slight exertion. Examination of the heart showed the apex beat in the fourth intercostal space just external to the nipple, with a thrill and humming-top murmur systolic and partly diastolic in time over the aortic area. X rays showed slight enlargement of the heart to the left, while the electrocardiogram suggested a right ventricular preponderance. The sounds resembled those of a patent ductus arteriosus, but were heard on the wrong side of the chest; this he thought might be due to transposition of the great vessels without transposition of the heart. Two other members of the family, the father and a paternal uncle, were said to have suffered from congenital heart disease.

Melanotic Sarcoma.

Mr. SAMPSON HANDLEY showed a case of melanotic sarcoma. The primary tumour on the cheek had been excised locally, and glandular deposits were treated medically for some time before the case came under his care. The case now exhibited a number of metastases spread around the site of the primary tumour, the distribution of which suggested that dissemination occurred through the lymphatics, as in cancer of the breast. In further proof of the lymphatic spread of melanotic sarcoma he hoped to show on a future occasion a case of recurrent melanotic sarcoma still living on which he had operated 15 years ago.

Diverticulum of the Bladder.

Mr. CLIFFORD MORSON showed X ray photographs and the stones removed by operation from two cases of diverticulum of the bladder containing stones. The first case was cystoscoped for pyuria, and the diverticulum containing stones was observed. Subsequent operation, however, revealed an inoperable carcinoma of the pouch. The second case, a man aged 75 years, had had a prostatectomy performed by Sir Peter Freyer 18 years ago. Five years later a stone was removed by litholapaxy. The skiagram on this occasion showed 15 stones which were removed by suprapubic cystotomy. The pouch in which the stones lay was very large and adherent to the colon, so that its removal was not deemed feasible. In answer to questions, Mr. Morson said that carcinoma in a diverticulum containing stones was, contrary to what might be expected, very rare. At a recent meeting of urological surgeons only two cases of the kind could be recorded.

A Case of Myotonia Atrophica.

Dr. JAMES PURDON MARTIN showed a woman, aged 35 years, who suffered from this form of muscular dystrophy. She exhibited the characteristic wasting in the facial muscles, the sternomastoids, the muscles of the forearms and of the right thenar eminence, the extensors of the thighs, and the right calf muscles. Myotonia was shown in the hand grasp and in the reaction of the muscles of the thenar eminence to percussion. Absence of all the tendon jerks with preservation of the normal superficial reflexes was also demonstrated. There was an interesting association of this disease with cataract, which usually appeared in two or more preceding generations, and in this particular patient was exhibited by the grandfather and father. These patients also exhibited a change in temperament becoming "negativistic." The children of the myotonic generation appeared to be normal. The explanation of the tonicity combined with wasting in the muscles was difficult, but the electrical reactions showed that the muscles and not their innervation were to blame.

Plastic Surgery.

Mr. ARTHUR EDMUNDS showed three cases illustrating the results of plastic surgery. The first showed the closure of a gap in the cheek by sliding flaps of mucosa on the buccal aspect; such flaps, if properly fashioned, would heal almost as readily as similar flaps on a normal skin surface. In the second case, a pedicled skin flap from the abdominal wall had been employed successfully to make good the loss of skin resulting from a severe crush of the hand. A case of hypospadias successfully treated by fashioning a new urethra by stages from the prepuce was also shown. The method employed was described and illustrated in THE LANCET (1913, i., 447).

UNIVERSITY OF MANCHESTER.—Amongst those persons selected by the Earl of Crawford and Balcarres to receive honorary degrees on the occasion of his installation as Chancellor of the Victoria University of Manchester are Prof. J. G. Adami, F.R.S., and Sir Arthur Keith, F.R.S. Prof. F. E. Weiss, D.Sc., F.R.S., has been reappointed Pro-Vice-Chancellor for a period of two years.

Reviews and Notices of Books.

THE HEART IN MODERN PRACTICE.

Diagnosis and Treatment. By WILLIAM DUNCAN REID, A.B., M.D., Chief of Heart Clinic at the Boston Dispensary; Junior Assistant Visiting Physician and Member of the Heart Service at the Boston City Hospital. London and Philadelphia: J. B. Lippincott Company. 1923. Pp. 352. 25*s*.

THE central motif of Dr. Reid's admirable little book is summed up by these words in the preface: "The day of the consideration of heart affections from the viewpoint of the structural change or anatomical lesion has passed; of greater importance is that of the functional condition and perhaps even more essential, to an intelligent conception, is the recognition of the ætiological type." In pursuance of this policy the author has divided the main part of his book into three sections. These deal respectively with the types of heart disease from an ætiological standpoint, functional conditions, and, lastly, structural lesions. In the present state of our knowledge a complete and perfect ætiological classification of disease is, of course, impossible. But even a provisional classification on these lines is infinitely preferable to the older system, which was not merely unsatisfactory, but tended to raise up an artificial boundary between structure and function.

During recent years so many new facts have been added to the physiological aspect of cardiology that a comprehensive text-book which attempts to give a complete account of the subject must attain considerable dimensions. Dr. Reid has not attempted to do this; and in cutting down the subject to suit the average student he has used the pruning-knife very freely. He has, however, succeeded in maintaining throughout a very good sense of proportion, and has given a thoroughly up to date, if brief, account of a difficult subject. The method of delegating the illustrative cases to an appendix makes the text the more readable, and both Dr. Reid and his publishers are to be congratulated on having produced such an attractive and useful book.

A DICTIONARY OF TREATMENT.

By Sir WILLIAM WHITLA, M.D., D.Sc., LL.D., M.P., Emeritus Professor of Materia Medica and Therapeutics in Queen's University, Belfast; Hon. Physician in Ordinary to H.M. the King in Ireland; Consulting Physician to Royal Victoria, Belfast Ophthalmic, and the Ulster Hospitals for Women and Children. London: Baillière, Tindall and Cox. 1923. Pp. 1100. 25*s*.

THAT seven editions of this work have appeared is testimony to its abundant popularity, but whether the condensation of the treatment of all medical, surgical, and gynæcological conditions into a single volume is any longer possible has become a debatable matter. It is inevitable that in such a work there must appear many statements which readers specially experienced in one branch of medicine must receive with reservation. That is not a serious matter while the principles are generally accepted unless omissions occur which obscure the principles. Some of the recommendations which appear in this edition will be challenged to-day—we may refer to the article on diabetes, in which, in spite of ample reference to the discovery of insulin, the clinical and laboratory tests given have been supplanted, and the diet much criticised, if not condemned. Under chronic dysentery there seems no mention of emetine as a possible specific treatment, and the mention of quinidine in the treatment of auricular fibrillation is dangerous in its brevity. It would be easy to multiply examples of the same nature; to do so would be to give a false impression of what is, in many respects, an accumulation of much wisdom included in a volume whose popularity is well deserved. Will not Prof. Whitla simplify and condense this work in a new edition? The advice seems to contradict remarks directed against omissions, but the omissions could be rectified if the space were found by rigorous deletion of the matter which is no longer accepted, or only half proved.

KLINISCHE LABORATORIUMSTECHNIK.

I. Band. Herausgegeben von Prof. THEODOR BRUGSCH und Prof. A. SCHITTENHELM. Berlin and Vienna: Urban und Schwarzenberg. 1923. Pp. 681.

THIS is the second edition of a handbook on clinical methods. The original first edition was issued under a different title: "Technik der Speciellen Klinischen Untersuchungsmethoden." Three volumes are projected for this second edition, of which the volume under review is the first. It deals with the following subjects: measurements of the body; estimation of blood volume; total hæmoglobin and minute volume of the heart; the electrocardiograph; the registration of arterial and venous pulse and of the heart sounds; registration of respiratory movements: X ray technique, bacteriological technique, histological technique, various optical apparatus (spectroscope, polarimeter, colorimeter, dark-ground illumination), and the technique of metabolism experiments.

The various chapters are competently written, but it is not easy to see the advantage of assembling in a bulky volume such heterogeneous material. The bacteriologist is not likely to be interested in the technique of the electrocardiograph or the methods of registering the cardiac sounds. For most of the subjects dealt with in this volume numerous more exhaustive monographs are already available, and it would have been preferable if the material collected in this volume had also been issued separately in the form of monographs.

HIGH-FREQUENCY PRACTICE.

Second edition. By BURTON BAKER GROVER, M.D., Fellow of the American Electrotherapeutic Association, &c. London: Chapman and Hall, Ltd. 1923. Pp. 399. 21*s*.

THIS book begins with an introductory chapter entitled "What is Electricity?" In this chapter are discussed the nature of electricity and light, the theories of atoms and electrons, &c. Next the nature and production of high-frequency currents are explained and various methods of applying them. Chapters follow on medical diathermy and surgical diathermy and deal with the uses of high-frequency for the production of heat within the body. Blood pressure in health and disease and the influence of high-frequency currents on it are next noticed and pain is defined; a classification of pains is given and the clinical significance of pain in various regions is discussed. In Chapter VII., the longest in the book, containing 140 pages, the treatment by high-frequency of over 80 diseases and morbid conditions is described. The treatment of diseases of the eye by the same means is considered in the next section. The author recommends the use of high-frequency and describes its application for cases of inflammation of the conjunctiva and cornea, for corneal opacities, iritis, glaucoma, cataract, optic atrophy, toxic amblyopia, and certain diseases of the lids. The book concludes with two appendices and a glossary. The first appendix contains a number of questions, which will enable the physician to examine himself as to the state of his knowledge of high-frequency. The second contains the author's presidential address to the Western Electro-Therapeutic Association.

After a perusal of this book the impression is gained that high-frequency currents have some physiological and therapeutic action other than that due to the production of heat in the body. The author states that the physiological action of these currents varies with the type of apparatus, but he does not say whether different types of apparatus differ in the

amount of heat which their currents produce in the body. The physiological actions of high-frequency currents on them are described for the different organs. It is said that "splanchnic stasis is relieved through a general stabilisation of the circulation." The secretion of the pancreas is stated to be "influenced in some unknown manner which results in decreased output of sugar in the urine." Under the heading of the spleen we read: "The reflex of contraction and dilatation may be incited through spinal application, thus in a limited manner controlling certain infections. Direct application favours the freeing of specific bacteria which enter the circulation causing recurrence of malady." Diathermy is described in two separate chapters and the idea is conveyed that it is a special branch of high-frequency therapy.

Although he will not agree with many of the statements made on physics and physiology, the English specialist in electro-therapeutics will find much that will interest him in this book. It is humorously written in parts. In the treatment of headache the author says that above all things the route which leads to the acetanilid shelf should be avoided. "Americanitis," he says, is one of the ætiological factors in neurasthenia.

OBSTETRIC TABLES.

A Guide for Students. Second edition. By MAURICE G. ANDERSON, L.R.C.P. Edin. London: A. and C. Black. 1923. Pp. 111. 3*s.* 6*d.*

THESE tables are intended for the use of students as a help in revising their work. The arrangement is good and no doubt they fill a useful function. We cannot, however, regard them as typical of modern teaching on this subject. For example, under the treatment of placenta prævia no mention is made of the use of a hydrostatic dilator, often one of the most successful methods of treatment, and in discussing the treatment of accidental hæmorrhage nothing is said for the necessity of Cæsarean section in some of these cases, while of plugging the vagina Dr. Anderson says that it is often successful, but with the added risk of sepsis. The average length of time required for the induction of labour by Krause's method is 84 not 12 hours.

PUERPERAL FEVER AND ITS PROPHYLAXIS.

By EUSTACE THORP, O.B.E., L.R.C.S., L.R.C.P., D.P.H., Assistant Medical Officer of Health, Sunderland; Medical Officer, Sunderland Borough Sanatorium. Bristol: John Wright and Sons. 1922. Pp. 48. 2*s.* 6*d.*

THIS little brochure contains an account of a series of small epidemics of puerperal septicæmia occurring in an institution.

Early in the year a septic case was notified; this was followed by a case of scarlet fever and these by five other cases of scarlet fever complicated by fairly severe septicæmia; there were two deaths. Disinfection having been thoroughly carried out cases ran normally until an emergency septic case was admitted and from this case 11 other women showed signs of infection; five were seriously ill, two fairly ill, and three sapræmic. There were no deaths. From his experience in these and other cases the author has written an eminently readable account of the chief features of this disease.

THE VILLEMIN HOSPITAL.

Un hôpital militaire à Paris pendant la guerre: Villemin, 1914–1919. Par F. LEJARS. Paris: Masson et Cie. 1923. Pp. 364. Fr.10.

M. Lejars is professor of clinical surgery in the Paris Faculty of Medicine and was during the war chief medical officer of the hospital about which he has written a book. He has given us a really charming work. Some philosopher has said that "there is something not altogether unpleasing in the misfortunes of our best friends," and when we recollect the strain which was felt by our medical establishments during the early days of the war, it is cheering to read Prof. Lejars's account of the Villemin Hospital. The building was old and had been *déclassé* for some 30 years. It was started in a secularised convent belonging to the Recollets (an order of reformed Franciscans) during the Revolution, and in 1860 was handed over by the Assistance Publique to the War Office as a military hospital, and refitted and enlarged under the name of l'Hôpital St. Martin. In 1913 its name was changed to that of l'Hôpital Militaire Villemin, in honour of the famous Jean Antoine Villemin, 1827–1892, who had proved in 1868 that the virus of tubercle is specific and inoculable. For all that the building had been condemned so far back as 1892, and was only a hospital in name, "*à titre provisoire*" while awaiting a successor. Threatened men live long, says our English proverb, and as Prof. Lejars remarks, "*le 'provisoire' est une des meilleures conditions de durée.*" Though *déclassé*, the hospital did receive patients into its 556 beds, the average annual numbers in the five years preceding the war being something over 2000. On August 2nd, 1914, various medical men, mainly civilians who were too old to go to the front, joined at the Villemin Hospital, most of them, including Prof. Lejars himself, as he openly confesses, entirely ignorant of any military service. The first chief medical officer was Gaucher, to whose memory Prof. Lejars pays a warm tribute—he died, worn out, on Jan. 25th, 1918. During the period August 2nd, 1914, to June 6th, 1919, 30,546 patients of all ranks were treated in the hospital, with a mortality of 847. The trials, struggles, and successes of the hospital must be read in Prof. Lejars's pages; suffice it to say admirable work was done by the devoted staff, and neither "Big Berthas" nor the attacks of aeroplane bombers could shake their courage. Prof. Lejars concludes with some reflections which are well worth reading as to the absolute necessity "for fusion and intimate collaboration, for the good of the service and of the country, between the (medical) officers of the active staff and those of the reserve (*complément*)."

ANATOMY.

Text-book on the Artistic Anatomy of the Human Form. By U. W. A. PARKES, Lecturer on Artistic Anatomy at St. John's Wood Art Schools. London: John Bale, Sons, and Danielsson, Ltd. 1923. Pp. 127. 10*s.*

EVEN to the professional anatomist there is a certain amount of interest in encountering the commonplaces of human anatomy under conditions differing from those to which he is accustomed. This book presents the skeleton and many of the muscles from the point of view of the artist, concerned with their bearing on the outer form. It is illustrated, mostly by the author's own competent pencil, to show how the structures he describes affect the surface appearances. The result is the presentation of unusual anatomical values, the whole done in a short and readable form. It is in no spirit of hypercriticism that we call the author's attention to a few anatomical errors. Thus, subcutaneous fat is not under the investing fascia, nor does this latter enclose the rectus abdominis; the action of the trapezius might be revised—as, indeed, might the account of the mechanism of raising the shoulder, apart from the analysis of this movement. Again, in some of the figures, certain changes might be effected in future issues: in the male skeleton, in the figure on p. 11, the upper end of the radius appears to be in full supination, while the hand, and seemingly the lower end of the radius, are semi-pronated; the drawing of the serratus magnus muscle gives it an origin from the ninth rib, although the account given in the text is the one usually accepted. Such errors, though it would be better if they had not occurred, hardly detract from the value which this book will have, we expect, in the eyes of students of artistic anatomy. A short and clear account is given of the distribution of weight by the skeleton, and we would suggest that this theme might be enlarged upon and made into a standpoint from which the artist could

view the effect of any action on even the most distant parts of the body, and hence on its form; yet perhaps this would be foreign to the idea of the author and would tend to widen the scope of the book too much. The work is well produced in every way.

Gray's Anatomy. Twenty-second edition. Edited by ROBERT HOWDEN. London: Longmans, Green and Co. 1923. Pp. 1378. 42*s*.

A BOOK which has passed into its twenty-second edition may be considered to be beyond criticism. Prof. Howden's able editorship during the last 20 years has made "Gray" what it is to-day, an English text-book of anatomy second to none. A good feature of the work to English or British eyes for many years has been the prominence justly given to work done at home, and in this matter the present edition has not fallen behind its predecessors. It is thoroughly up-to-date. Gray's Anatomy has always been a favourite with English students, and the oldest among us remember it as a sheet-anchor when at sea in early days; if we regret the change in nomenclature which has been adopted, it does not lessen our affection for the book, though it may affect the frequency of our consultations. The present edition has some 60 new figures and has been revised in general, and is worthy of the place of honour it occupies.

AIDS TO PUBLIC HEALTH.

By W. G. AITCHISON ROBERTSON, M.D. London: Baillière, Tindall and Cox. 1923. Pp. 160. 3*s*. 6*d*.

THIS volume is designed to refresh the memory of the student as to the main facts in the various subjects in public health, and the useful rôle has been fulfilled. The book makes the usual survey of hygiene and public health, successive chapters dealing with meteorology, air ventilation and heating, water-supply, house sanitation, drainage, disposal of sewage, house and hospital construction, food, disinfection, infection, infectious diseases, the soil and disposal of the dead, diseases due to occupation, schools and medical inspection, vital statistics, and sanitary administration. The summary of these subjects which can be made in 160 pages is necessarily sketchy and such curtailment of statements implies not only omissions of important matter, but also the inclusion of statements which need expansion and even modification to render them useful and accurate. Assuming, however, that the student has studied larger volumes, and above all has engaged in the various branches of public health work, he will find the volume useful.

RADIOACTIVITY.

By KASIMIR FAJANS. Translated from the fourth German edition by T. S. WHEELER, B.Sc., A.R.C.Sc.I., A.I.C., and W. G. KING. London: Methuen and Co., Ltd. 1923. Pp. 138. 8*s*. 6*d*.

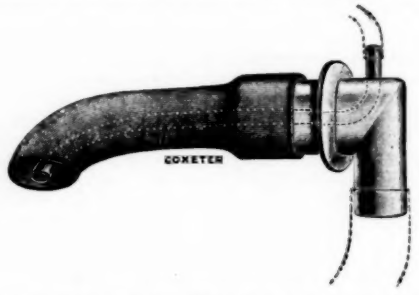
Prof. Fajans's book has been well known to specialist workers in physics and chemistry, and such will welcome the translation, as it will present an extremely readable account of radioactivity and cognate lines of work to a much wider circle of readers. It may be said at once that, although hardly a literal translation, the enthusiasm of Fajans for this branch of work, so apparent in the original German, is not lost in the English edition. The wonderful developments which have taken place since Becquerel's discovery of radioactivity in 1896, including the isolation of radium and other radioactive substances, the transformation products, and their position in relation to the ordinary chemical elements in the periodic table, are described. The nature of isotropes, both those whose origin can be traced as degradation products of radioactive elements and those which have been shown by positive ray analysis to occur in common elements, and the effect of these discoveries on chemical theory, are dealt with in a most lucid manner. The nature of the atom, the decomposition of some atoms by rapidly moving particles, such as X rays, follow as a natural sequence to the earlier chapters.

Although so brief a time has elapsed since the first experimental observations were made in this field, it is remarkable that the story as presented in this book should be so consecutive, and also gratifying that results of such great importance should be published in a form that anyone with only a slight knowledge of physics and chemistry can benefit. The specialist will find the numerous references to original papers and the notes given at the end of the book invaluable.

New Inventions.

IMPROVED ANÆSTHETIC APPARATUS.

Two small modifications of everyday anæsthetic apparatus have proved useful and may be of interest. 1. An improved airway which, as shown by the illustration, consists of an ordinary airway of the Phillips type, to the mouth-piece of which is fitted a removable and reversible metal elbow-piece similar to Clayton's, and of only sufficient length to afford firm attachment to a thick-walled rubber tube of ½-in. bore.



A narrow bore angular tube is fitted into this elbow so that its outer end forms a nipple for attaching to the delivery tube of any anæsthetic apparatus, the inner end being prolonged within the airway by a thin rubber tube of nearly equal length. When used with chloroform from a Junker, a short length of rubber tube of wide bore may be attached to carry away the anæsthetic vapour from the operation area—e.g., in ophthalmic operations. By increasing the length of this tube a degree of re-breathing may be obtained, whilst when gas and oxygen is used a bag is attached to the end of the tube. The small bag from a Clover's apparatus has usually been used, with the tap open to serve as a blow off; it is connected up with a special adapter and clipped in a convenient position at the edge of or below the table.

2. A modified three-way (Barth's) gas-valve. The passages through this valve are, as a rule, rather narrow, but when in the usual position for gas and oxygen administration—i.e., that giving a partial re-breathing—it will be seen that the available airway is much restricted by the rotating septum to which the inner (inspiratory) valve is fixed. Further, if left wet this valve is liable to stick. In use, unless accurately adjusted and watched, the action of the valve causes emptying of the bag. The inspiratory valve has therefore been entirely removed, which permits of all openings being enlarged. In use, the amount of re-breathing depends on the rate of flow of the gases, the bag being always filled by expiration. The escape of expiratory gases from the bag is controlled by the degree of closure of the expiratory valve only, an additional "click" being provided to keep this valve in its usual working position—i.e., about half closed. In addition, an adjustable elbow is fitted over the expiratory valve mounting, and carries away expired gases by a rubber tube below the table.

The makers are Messrs. Coxeter and Son, Pancras-road, London, N.W.

London, N.W. R. J. CLAUSEN, M.B., B.S. Lond.

THE LANCET.

LONDON: SATURDAY, OCTOBER 27, 1923.

THE PRINCIPLE OF THE THING.

> "While willing to serve the community to the best of its ability, and to make any satisfactory arrangement to this end with the representatives of the community, the medical profession is not prepared to accept the position of being under the dominance or control of a particular section."

THE Panel Conference has met and has amply endorsed the statement of the issue in the present crisis contained in the above words. The words are those of the Insurance Acts Committee in the latest stage of the negotiations between the Minister of Health and practitioners working under the National Health Insurance Acts. The representatives of panel committees were unanimously willing, as the report of the Conference on p. 947 shows, to commit their constituents to a refusal of further service under the Acts rather than continue to serve under the conditions offered. The Minister, it appears, admits his reponsibility for the financial burden which is to be put on the community, but it seems to us that he hardly grasps the full responsibility placed upon him by Parliament for the nature of the services given in return. The medical profession looks, and rightly looks, to the Minister for protection against the unsympathetic attitude of approved society officials, who are clearly fighting for something more than their own autonomy. They desire, overtly or implicitly, control of the national insurance system as a whole, and of the medical benefit in particular, from control of which they were expressly excluded by the Act of 1911. Clause 14 (1) of this Act is so precise and categorical that it is hard to see how any doubt upon this point can have arisen. There is, we are confident, no inherent dislike on the part of doctors for approved societies or their officials, no desire to give them less than their due in administering sickness and additional benefits; there is, in fact, a cordial coöperation steadily growing up in the local working of the Acts. Our special commissioner (p. 951) bears testimony to this in the Manchester and Salford area. But the unreasoning rancour shown by some of these officials towards insurance practitioners as a group affords ground for suspicion and hesitation on the part of the medical profession. Dr. H. B. BRACKENBURY himself, who presided over a series of round-table conferences of all interests, and seemed at one time hopeful of an arrangement by consent, is now sadly convinced of the futility of such conference inasmuch as the public statements of some of these officials do not agree with their private undertakings.

It is this question of the outside control of insurance medical service which must now be decided once and for all. It is the real crux of the controversy and the reason and justification for the unanimous refusal by the Panel Conference of the terms offered by the Minister of Health. The tone of the conference was firm and restrained, and little doubt exists that its representatives can make good their undertaking to call in the resignations of the necessary proportion of the doctors on the panel. Faced with this evidence of solidarity the medical profession can await the outlook with confidence. The national insurance committees have never yet, as Sir WILLIAM GLYN-JONES points out (p. 961), risen to their full stature, but they are not going to stultify themselves by attempting to administer medical benefit with the scanty help of those who stand aside. Action has not been hasty on the part of the doctors. Prolonged efforts have been made on the professional side to rectify as far as possible the conditions complained of by approved society officials. The new regulations when (perhaps we should write "if") they are issued, will show how far the insurance medical service has been willing to go. Nevertheless, the societies insist upon a cheap service, and have taken upon themselves to discuss what the actual remuneration for this service shall be. Now it cannot be reiterated too often that the societies do not pay the doctors; they are the recipients, as trustees, of that portion of insurance funds allotted for sickness benefit and administrative expenses; they have nothing whatever to do with the medical benefit funds, and it may be feared that, should they attain the position to which they aspire, of administrators of the whole fund, they would gladly cut out the Ministry of Health whose regulations they have always found irksome.

This is the danger which the medical profession clearly envisages in 1923, as it did in 1911–12, and once again a firm stand is to be made. On matters medical the profession should and must be given a free hand. There is in existence adequate machinery to deal with delinquents in its own fold, and the new powers given to panel committees will enable them to exert a much tighter control on any who are slack or devoid of principle. Approved society officials have attacked the insurance medical service as a whole because of their local knowledge of the "black sheep," whose numbers must be small indeed, judging by the complaints which are substantiated. The present action of these officials would drive out of the service precisely the type of practitioner whose coöperation is necessary to maintain its standard. We believe that the approved societies will find it hard to convince the insured public that the community will gain by usurpation of the control which was refused to them in 1911. It is a misfortune which was foreseen and which yet could hardly have been avoided, that the Insurance Acts should create vested interests with great political power. The spirited action of the Panel Conference is likely to prevent this power from becoming a danger to the community. Unless doctors serving voluntarily under the Insurance Acts are allowed to give their service in accordance with the best traditions of their profession, they prefer to wash their hands completely of a system which is in peril of becoming derogatory to their calling. In any case they will find a way of serving the community.

PHYSIOLOGY AND SURGERY.

TRADITION dies a slow death and custom often remains the only basis for perpetuating a system which long ago should have been superseded by methods more in conformity with modern intellectual conceptions. The idea that surgery is primarily a mechanical art is ineradicably fixed in the minds of many who do not practise it, and, indeed, in some of those who do. Physiology has always been an applied science, and progress in it waits upon the advance of knowledge in other directions. The greatest service that can be done to physiology is the stimulation of research in such sciences as those of chemistry, physical chemistry, and pure physics. That surgery must always be based upon physiology, whilst physiology must derive benefit from the advance of surgery, is so clear to the thinking active surgeon that it is always a matter of amazement to him that the generally accepted training of the surgeon is not based more upon this conception of the interdependence of the two branches of knowledge.

Sir EDWARD SHARPEY SCHAFER, in the first Victor Horsley Memorial Lecture, which we print in full in this issue of THE LANCET, chose as his subject the relations of physiology and surgery, a subject peculiarly fitting for a lecture instituted to commemorate a surgeon of HORSLEY'S stamp. In his most stimulating address he shows how false is our belief in the adequacy of the training the surgeon obtains by a prolonged apprenticeship in the dissecting room. Nothing but the trammels of tradition have allowed a system to persist under which the physician graduates through the physiological laboratory whilst the surgeon is relegated to the dissecting room. Powerful though many of the remedies of the physician are, the upset to normal physiology effected by the activities of the surgeon is, on the whole, enormously greater and infinitely more frequently brought about. Surgery, against all the dictates of scientific methods, seems usually to have worked backwards. Cachexia strumipriva had to result from complete removal of the thyroid before investigation of the functions of this gland took place; gastro-jejunostomy, introduced on a sound basis, was applied to relieve other conditions on assumptions which were afterwards proved actually to be totally wrong; whilst the large bowel was removed in man before the resulting changes in physiology brought about by its absence had been studied in animals. The wonderful power of adaptation possessed by the body has masked and remedied what otherwise would have been evil results. But much suffering might have been avoided if surgical problems had been tackled by the methods followed in other sciences. Sir EDWARD SHARPEY SCHAFER points out how our legislation hinders investigation in medicine and surgery. It is time to modify the dictum that anatomy is the basis of surgery. A correct knowledge of anatomy is as essential to the art of surgery as an acquaintance with Greek to the study of the classics. Each science has its own technique, the mastery of which is a necessity. There is a tendency to belittle the place of technique in surgery at the present time. Nothing could foster delay in progress more than this. The manual work of the surgeon must be as perfect as that of the chemical or physical investigator, whose exactness is proverbial. The mistake is to suppose that such technique is based solely on the teachings of anatomy. Such physiological facts as the reaction of the tissues to the trauma of operating, or the changes of digestion brought about by new anatomical relations, are of vast importance. The avoidance of the dangerous symptoms which sometimes follow the operation for exophthalmic goitre will never be achieved by anatomical studies, nor could it have been argued from structure that, in order to anastomose the intestine, peritoneal surfaces must be brought and maintained in apposition.

Such examples might be multiplied almost indefinitely, but sufficient has been said to show the paramount place which physiology plays in the problems of surgery. It is not surprising to learn that the greatest surgeons have nearly always been physiologists. VICTOR HORSLEY was a great example of this, and it is well to be reminded that LISTER himself made many physiological investigations. The association of the surgeon with the physiologist in many of our London hospitals is not as close as is desirable. Whilst the surgeon has everything to learn from the physiologist, there is no doubt that he can contribute hugely to the common store of knowledge and so make physiological experimentation conform more to the actual conditions present during life. For it must be admitted that many of the experiments of the physiologist are crude in their commencements, so that at first the deductions made from them require careful evaluation. The ideal in all physiological experiments is to disturb as few factors as possible and those affected should be known. Only in this way can we obtain unequivocal results. It seems that the realisation of this ideal would be made appreciably nearer by a closer association of the surgeon with the physiologist, and there are not wanting signs that this is being attempted.

PUBLIC HEALTH IN LOCAL LEGISLATION.

THE Special Report of the House of Commons Select Committee on Local Legislation in 1923 gives prominence once again to a matter to which once again we draw attention. "Most of the Bills which your Committee have considered during this, as in previous sessions, contained provisions relating to public health, sanitation, and other matters which were set out in the Special Report of 1922. Your Committee would emphasise what they have pointed out in previous years, that, as many of these powers are now usually sought, a consolidation and extension of the Public Health Acts, 1875–1907, so as to include such powers under general legislation, would be extremely beneficial to local authorities." Owing to the inexplicable delay in printing the Local Acts,[1] comment on their general contents must be suspended till the text is available. Even the Special Report from which we have quoted, though ordered by the House to be printed as long ago as July 31st, has only now appeared. The Report, however, mentions an interesting clause in the Chesterfield Corporation Bill which empowers the local authority to prohibit squatters or gipsies who prove themselves a nuisance or injurious to health from settling within certain limits. The Report also comments on the measures for tuberculosis prevention authorised in the Torquay Corporation Bill. "Your Committee, bearing in mind the peculiar position of Torquay as a health resort, considered it necessary that any person having the charge, management, or control of any hotel,

[1] See THE LANCET, Oct. 6th, p. 796.

boarding-house, or lodging-house should compulsorily notify such cases to the proper person." There is no occasion for apologetics or for special treatment. Let all honour be paid to Torquay for its progressive attitude, but in the fight against disease there is no monopoly of the best weapons; what is good enough for Torquay is good enough for the rest of the country. Similarly the Maidstone Corporation Act (which received the Royal Assent on July 18th, but has only now appeared in print) exhibits all those public health provisions with which a modern borough seeks to equip itself—the measures for drainage and sewerage (including power to repair private drains), for properly ventilated larders in dwelling-houses, for an adequate system of domestic sanitation, for preventing the spread in Sunday schools of "infectious disease" (defined to include measles, German measles, whooping-cough, chicken-pox, and influenza), for the medical inspection of inmates of common lodging-houses in times of epidemic, for the removal of infectious corpses, for taking to hospital sufferers from pulmonary tuberculosis, for tracing infected clothes to laundries, for regulating ice-cream manufacturers, retailers of milk, and rag-and-bone merchants, for cleansing verminous houses, persons and children, and for the protection of meat-supply. Why should a progressive municipality be put to all the trouble and expense of obtaining these powers or of securing local improvements upon the general Public Health Acts when Parliament might confer these benefits upon the country as a whole?

Apart from the question of extending and amending the Public Health Acts the need of consolidating them remains as urgent as ever. The original measure is obsolete in its references both to the central and the local authorities entrusted with health administration, and everyone concerned is handicapped by having to work with a series of amending and overlapping enactments. On the second reading of the National Health Insurance (Consolidation) Bill, Lord ONSLOW indicated that it was hoped to consolidate also the law of housing and of public health. In the latter case particularly the process has long been overdue.

Annotations.

"Ne quid nimis."

HARVEIAN CELEBRATIONS AT THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

ON Thursday, Oct. 18th, being St. Luke's Day, after the delivery of the Harveian Oration, which we published in our issue of Oct. 20th, the Royal College of Physicians of London held the usual Commemoration Dinner. Sir Humphry Rolleston, the President, presided over a large assembly of officers and Fellows of the College and their guests, who included the Minister of Health, the President of the Royal College of Physicians of Edinburgh, the President of the Royal College of Surgeons of England, the Medical Director-General of the Navy, Air-Commodore Munro, Lord Justice Atkin, Lord Chelmsford, Dr. R. W. Innes Smith, Prof. Langley, and Sir Squire Sprigge. The health of Prof. Starling, the Hunterian orator of the year, was proposed in happy terms by Dr. John Fawcett, the Senior Censor of the College, whose recognition of the great physiologist as being *in esse* and *posse* a great physician was received enthusiastically by an audience which knew the long and distinguished tale of Prof. Starling's medical war history. The closing section of the Harveian address was an exact illustration of the way in which the highest and most elaborate physiological researches can be brought to play their part in practical therapeutics. Prof. Starling, in reply to the toast, brought out the interesting fact that the choice of a physiologist to deliver the Harveian oration, which is the greatest distinction that a Fellow of the College can be asked to enjoy, had one particularly interesting precedent, for the last time that the oration was delivered by a Fellow of the College, not holding a clinical position, was when the Harveian orator, in 1873, was Prof. George Rolleston, Professor of Anatomy and Physiology in the University of Oxford, and father of the President of the College to-day. Sir Humphry Rolleston, in proposing the health of the guests, to which the Minister of Health and Lord Chelmsford replied, alluded to the award of the Baly medal to Mr. Joseph Barcroft, the Bisset-Hawkins medal to Dr. T. M. Legge, and the generosity of Dr. R. W. Innes Smith in presenting to the College a portrait of Sir Charles Scarburgh, which he had traced from the Temple Newsam Collection, lately dispersed.

STRICTURE OF THE ŒSOPHAGUS FOLLOWING TYPHOID FEVER.

Dr. P. P. Vinson,[1] of the Mayo Foundation for Medical Education and Research of the Minnesota University Graduate School, remarks that ulceration in the œsophagus is one of the rare manifestations of typhoid. In 2000 autopsies on typhoid cases reported by Hölscher the condition was found only once. On the other hand, Louis found œsophageal ulceration in 7 out of 46 typhoid autopsies, and Mitchell in 1 out of 56. In 1904 Thompson recorded three personal cases of œsophageal stricture following typhoid, and collected nine others from the literature. Turner had another in 1902, since when Dr. Vinson has been unable to find a report of any further case. He now records 13 cases of stricture of the œsophagus following typhoid in patients aged from 13 to 47, which have been observed at the Mayo Clinic since 1909. Of the total 26 cases only 13 occurred in women. The stricture was usually situated in the lower part of the œsophagus, corresponding to the commonest site of ulceration. Of the 13 cases previously recorded, three died from lack of treatment, one died during treatment, and three had gastrostomy performed. The remaining six were apparently cured by the passage of sounds, seven of the Mayo Clinic series had had gastrostomy performed elsewhere, and in four of these the stricture was impermeable. In six of the patients without and in two with gastrostomy normal deglutition was restored by dilatation with graduated sounds.

THE BLOOD PRESSURE IN SCARLET FEVER.

Dr. R. Doria,[2] of the isolation department of the Umberto I. Policlinic, Rome, reviews the literature, including the papers of Teissier and Tanon (1908), Nobécourt and Tixier (1908), and J. D. Rolleston (1912), and records his own observations on 67 patients aged from 16 months to 32 years; 32 were males and 35 females. The maximum and minimum pressures were examined by the auscultatory method with Riva-Rocci's instrument. The measurements were generally taken at the same hour, usually in the early afternoon, and in some instances in the morning. No differences were observed between males and females of the same age as regards either the maximum or minimum pressure. Dr. Doria's conclusions were as follows: (1) Scarlet fever causes a fall of blood pressure like almost all the acute infectious diseases, with the exception of malaria. (2) This fall of blood pressure takes place more or less early, and may appear in the pre-eruptive, eruptive, or desquamation stage. It is more or less persistent, lasting usually a week at least. Its intensity varies, being most pronounced in severe cases, of which there were 14 in the present series, while in others it is slight or barely perceptible. (3) The fall of blood pressure is obviously connected with the general vaso-dilatation and weakness of the left ventricle in scarlet fever. It is not necessarily

[1] Medical Clinics of North America, July, 1923.
[2] Il Policlinico, Sezioen Pratica, Sept. 10th, 1923.

due, even when it is pronounced, to severe organic lesions of the suprarenals. (4) There is usually a more or less marked diastolic hypertension, the diastolic pressure showing a tendency to increase throughout the disease. Sometimes in convalescence there is for a short period a fall in diastolic pressure, which should serve as a warning of a sudden attack of cardiac insufficiency. (5) Accidental rises of the maximum pressure have no special prognostic value, and are often due to painful complications. A rise of the maximum pressure to the normal level in association with albuminuria should make one fear the onset of nephritis, whereas albuminuria without a rise of blood pressure does not, as a rule, precede nephritis. (6) Injections of convalescent and anti-streptococcic serum, the serum disease, and injections of vaccine cause a more or less considerable fall of blood pressure. Apart from these cases a sudden fall of the diastolic pressure, especially if it is associated with a diminution of the diastolic pressure, indicates the onset of a complication, particularly one affecting the heart. (7) The hypotension of scarlet fever cannot be attributed to the diet, because it is found in patients who are taking an adequate supply of nourishment, and sometimes appears at a very early stage, nor can it be explained by the patients lying in bed as it often persists after they have got up.

BILHARZIASIS IN THE DONGOLA PROVINCE OF THE SUDAN.

THE Dongola Province is one of the most fertile agricultural areas of northern Sudan, producing crops of millet, wheat, and cotton. Irrigation was formerly performed by the historic Sakia, but this is now being superseded by a series of pumping stations installed by the Government. It appears that bilharziasis has recently appeared in the Province, the infection having been introduced by the Egyptian labourers engaged on the irrigation works. The urinary form of infection caused by *Schistosoma hæmatobium* prevails and suitable intermediaries in the shape of fresh-water molluscs known as *Isodora innesi*, originally determined by Leiper as a possible host, abound in the irrigation canal. The susceptibility of this particular variety of snail to infection not having been experimentally determined, R. G. Archibald attempted to infect a number of them artificially with miracidia obtained from a local case of bladder bilharziasis and has succeeded in doing so. He has recorded his experiments in the Transactions of the Royal Society of Tropical Medicine (xvi., 7, 419). It was soon ascertained that this species is very susceptible, but owing to the high mortality-rate in captivity, it was impossible to state what was the actual proportion of snails infected. The characters of the cercariæ derived from these artificially infected snails agreed on the whole with those already published, and measurements taken from 30 specimens also agreed closely with those of Manson-Bahr,[1] Fairley, and Faust.[2] With the active cercariæ derived from an infected mollusc Archibald succeeded in infecting a monkey which was killed in the seventh week. A number of adult schistosomes with the morphological characters of *S. hæmatobium* were found in the portal vein. Armed with this knowledge, the following measures are suggested for the eradication of the disease in the Dongola Province: (1) The cure of cases of the disease by means of antimony therapy should be undertaken. This, even under the most ideal conditions, can be only partially successful, since large numbers of infected natives cannot be induced to undergo the treatment; nor is it possible adequately to check the results by laboratory investigation. There are always large numbers of latent cases with either very slight or non-existent symptoms which escape detection. (2) Measures undertaken with the idea of destroying the intermediary host appear to be more hopeful. This particular snail dies if deprived of water for a period longer than six hours. An intermittent system of irrigation would give the canals time to become dry and in this period the snails would die off, but this must be combined with measures undertaken to clear out the ponds and collections of water which occur in the neighbourhood of the sluices. This should be done at periodic intervals and the natives should be encouraged to keep domestic ducks which feed on these snails. Wiring of the intake pipes as a means of preventing the ingress of molluscs on floating weeds is suggested as a subsidiary measure. Other suggestions are the supply of well water to the natives for ablution and drinking purposes, and the initiation of propaganda measures in the form of illustrated pamphlets printed in Arabic, calling attention to the danger of drinking water from the irrigation canals, and illustrating the part played by the mollusc in the spread of the disease.

[1] Parasitology, January, 1920, Observations on Bilharziasis among the Egyptian Expeditionary Force.
[2] The Journal of Parasitology, June, 1919, Notes on South African Cercariæ.

SCIENTIFIC INSTRUMENTS.

IN the first number of the *Journal of Scientific Instruments* the chief item of medical interest is that on a new Recording Kata-Thermometer, by Dr. E. H. Schuster. The original instrument by Dr. Leonard Hill was designed to measure the power of the air to cool the human body. The actual observations necessitated temperature readings and the time required for certain temperature changes. In the new apparatus described this is carried out automatically, and a tracing is made consisting of a horizontal line broken every quarter of an hour to give a record of elapsed time, and above this a series of vertical ordinates to represent the number of seconds taken by the instrument to cool through the specified range. This appears to be a useful modification of the original design, and it is likely to be of great industrial service to have an instrument which automatically records a very important factor in the hygiene of the workshop. It is gratifying to see in the production of this journal that the joint efforts of the Institute of Physics and the National Physical Laboratory have borne good fruit. Provided it gets the necessary support from investigators and inventors it is certain to find a place in the ever-increasing periodical literature of the scientific man. The contents of this first issue are extraordinarily varied, the contributions being from applied mathematicians, electrical experts, chemists, inventors; there is included a brief but very practical article on the Chain Balance, by Sir Flinders Petrie.

THE BOARD OF CONTROL FOR SCOTLAND.

THE Ninth Annual Report of the General Board of Control for Scotland records an increase in the total number of insane of 229, and a considerable increase in expenditure. Every district had sufficient accommodation for its insane except Glasgow, some of whose patients are placed in more or less remote asylums, and can therefore not easily be visited by their relatives. The reopening of the Edinburgh District Asylum, following its evacuation by the military authorities, has been accompanied by various structural improvements, and entailed the transference of 600 patients. Statistics apart, the bulk of the Report is composed of abstracts from the Medical Commissioners' reports on each institution, including the lunatic wards of poor-houses. The impression created by these reports is one of excellent management and general efficiency. Such criticisms as are made, which apply in some cases to only one or a few institutions, concern the lack of facilities for proper classification of patients, and in particular for isolating recent cases, the imperfect isolation of the tuberculous, and the neglect of post-mortem examinations. There is a remarkable absence of any adverse criticism of food or clothing.

A feature of the Board's work which evidently causes some anxiety concerns the disposal of the mentally defective. The imperial grant for this purpose covers the maintenance in institutions of only 1477

defectives, and an additional grant recently made only partly covers the expenses of 200 more. Three districts have therefore undertaken the institutional treatment of numbers of defectives at their own expense. The respective merits of home, institutional, and boarding-out treatment at various ages are discussed at some length. The absence of accommodation for ordinary defectives over 16 years of age has led to the practice of defectives being retained in their own homes where these are considered suitable, or where the parent is unwilling or refuses to part with them, or they are placed under guardianship. Many of these defectives are of an age when special care and institutional training, particularly in the form of industrial and farm colonies, are required to complete and consolidate the education and training gained in special schools and classes and in defective institutions. Hitherto, if they cannot be kept at home, or if the home conditions are unfavourable, or their mental conditions are such as to demand institutional care, these defectives have been certified under the Lunacy Acts and placed in asylums. The Board do not view this practice with favour.

ACTIVE AND PASSIVE IMMUNISATION IN TUBERCULOSIS.

IN a communication to the *Deutsche medizinische Wochenschrift*, published on Sept. 21st, Prof. Paul Uhlenhuth has given an account of laborious investigations carried out by himself and his colleagues during the past few years. They have attempted in various ways to immunise experimental animals to tuberculosis by the injection of the products of tubercle bacilli treated in an almost infinite variety of ways. The most effective means of robbing the tubercle bacillus of its waxy and fatty capsule proved to be treatment of tubercle bacilli for two days with chemically pure trichlorethylene at room temperature, or at 37° C. But whether the various constituents of the tubercle bacillus were injected singly or together, the fate of the rabbits and the guinea-pigs was the same; they fared no better than the control animals when inoculated with virulent tubercle bacilli. No better results were obtained with the injection of tubercle bacilli which had been exposed to circulating steam for two hours, or to a dry heat of 150° C. for half an hour. Other experiments were also carried out with tubercle bacilli treated with antiformin and then washed with saline solution, dried, and pulverised. The injection of an emulsion of this pulverised tubercle powder into rabbits and guinea-pigs failed to avert death from tuberculosis when these animals were inoculated with virulent tubercle bacilli, and Prof. Uhlenhuth confesses that he is very pessimistic as to the likelihood of immunity to tuberculosis being achieved by the administration of dead products of the tubercle bacillus. Another line of research on which he has been engaged has been to inoculate cattle with a 21-year old avirulent strain of tubercle bacilli, and to inject the serum obtained from these cattle into guinea-pigs. The response of the guinea-pigs thus treated has been quite disappointing; their reaction to a subsequent inoculation with virulent tubercle bacilli has not been appreciably better than that of the control animals. So far Prof. Uhlenhuth's account is a long record of uninterrupted ill successes. But at the end of his paper he refers to some hopeful clinical investigations made by his colleague, Prof. Czerny, who has given to tuberculous children the serum obtained from cattle inoculated with large doses of avirulent bacilli. Prof. Czerny's account is to be published in the forthcoming number of *Jahrbuch für Kinderheilkunde*. Prof. Uhlenhuth is, however, able to state that the results obtained by Prof. Czerny in 20 cases of severe tuberculosis of the lungs, larynx, and other organs were remarkably good, the response being considerably better than in the control cases given ordinary bovine serum, or the serum of previously untreated horses and asses. Prof. Uhlenhuth hopes that extensive clinical research will be carried out on the lines indicated, and that with the judicious use of controls it should be possible to form a fair opinion of the merits of this form of serum treatment in tuberculosis.

A CURIOUS CONDITION OF THE SEMILUNAR CARPAL BONE.

A PECULIAR condition of the semilunar carpal bone, resembling osteo-malacia, is described by Prof. Dr. Sonntag.[1] In his opinion it occurs more frequently than the few reports would lead one to think. The disease can be compared to the condition found in the head of the femur in Perthes's disease, and to that of Köhler's disease of the head of the second metatarsal bone. The condition was first described by Kienbock in 1910, and since then reports have been published by Preiser, Guye, Frenkel-Tissot, Müller and Sonntag, numbering some 30 cases in all. Prof. Sonntag now reports 12 cases occurring in the chirurgische Poliklinik in the University of Leipzig during the last year, and from this it appears that the disease must be of not very infrequent occurrence, were it only recognised. It is found in both sexes, between the ages of 17 and 45, rather more often in the right hand than the left, and chiefly among manual workers. In a few of the cases the semilunar bone has been removed by operation, when the following pathological changes have been found. Macroscopically the bone appears to be irregularly compressed proximo-distally, and sometimes it is found in several pieces, more or less adhering together, so that the pieces are removed separately at operation. The proximal joint surface shows the greatest changes; it is yellowish in colour and irregularly scarred, in parts either eroded or destroyed or split, and sometimes crumpled as though it were disturbed by the underlying collapse of bone. One case had a piece of cartilage raised up and projecting into the joint cavity, the defect being filled with granulation tissue. The overlying ligaments are often much hardened with callus, while the neighbouring bones show deformatory changes. Microscopically the proximal part of the bone shows necrosis of the spongiosum, with new formation and destruction of bone tissue, osteoid tissue surrounding the laminæ, deposition of calcium, connective tissue formation, and cellular infiltration in the neighbourhood of the necrotic foci. There is never any evidence of tuberculous or syphilitic infection. The changes resemble rather incomplete healing of a fracture, but the condition cannot be explained on this basis owing to the fact that half the cases occur in the absence of any recognisable trauma. In those cases in which a trauma has been present X ray examination shows no changes in the early stages, but only some months later reveals the characteristic changes, thus suggesting that the fractures are secondary, and occur as a result of the previous necrosis of bone. The latter may be due possibly to some interference with the blood supply, which may in some cases be consequent to slight trauma causing the condition generally diagnosed as contusion or sprain. These cases might be called post-traumatic. In the group in which no trauma is recognised the condition may possibly be caused by repeated small occupational injury.

Constitutional changes, such as late rickets, can be excluded, as the general condition of the patient is usually very good. Clinically three stages may be recognised: (1) symptoms of joint irritation (lasting a few days or weeks); (2) a comparatively symptomless stage (lasting a few weeks or months); and (3) the stage when the condition is well marked as a clinical entity, with an acute onset followed by permanent pain of moderate severity. In the non-traumatic variety the trouble develops after one or more acute attacks (which are, however, less acute than in the traumatic variety), until a chronic stage is reached. The clinical picture in an acute attack, which is usually brought on by some extra work or

[1] Deutsche medizinische Wochenschrift, Oct. 5th, 1923.

overstrain, and brings the patient to the doctor, is as follows: (*a*) pain with active and passive movements, especially on performing hard work: (*b*) localised pain over the semilunar on the dorsal and palmar aspects, mostly on hyperextension, but also on hyperflexion, and on pulling the hand or jarring it longitudinally; (*c*) swelling of the soft parts, mostly on the dorsal spect; (*d*) limitation of movements in all directions; (*e*) sometimes crepitation; (*f*) sometimes shortening of the whole wrist joint. Together with these symptoms there is loss of power in the hand, and sometimes muscular atrophy. The X ray picture in the early stages may be normal; later the characteristic changes consist in alteration of the structure, showing disturbance of the laminæ, with areas of density and opacity, arranged in patches or in stripes. The whole bone is compressed proximodistally, like an impacted fracture. The proximal surface is irregular and less rounded, and often shows projecting particles. The bone may be divided into two or more pieces, or one corner may be cut off by a cleft. The other bones may be displaced. The diagnosis of a typical case can usually be made without difficulty on the clinical appearances once these are recognised, but in the early stages the condition cannot be distinguished from a contusion, and usually is diagnosed as such unless an X ray is taken at a later date. In Prof. Sonntag's series, after the first few cases were recognised, the remainder were diagnosed clinically in the out-patient department by the assistants and students. The condition can be diagnosed from fractures, dislocations, tuberculous affections, and osteo-arthritis by the X ray. Contusion and distortion give similar pictures, but can be distinguished by the fact that in the semilunar disease the disability continues much longer and tenderness is limited to the semilunar. The prognosis cannot be definitely stated without further and longer observations on more cases, but it can be said from the present experience that the prognosis respecting cure and function is very doubtful. The condition is usually chronic, and often leads to true osteo-arthritic changes. It is also not known how many slight cases cure themselves, but when once X ray changes are demonstrable it is likely that the disability will persist for years, if not for ever. Treatment is still uncertain. Conservative measures appear to give the best results; in the early cases treatment as for contusion; in the late as for osteo-arthritis. Operative removal of the bone has been carried out, but so far has not been uniformly satisfactory in relieving the symptoms.

ETCHER AND SURGEON.

THE etchings of Sir Francis Seymour Haden have recently been reproduced and published in one volume, under the editorship of Malcolm C. Salaman, a collection which should have a special interest for members of the medical profession. It is but seldom that distinguished service to the science of medicine is combined with outstanding work in any field of art, yet in the late Sir Francis Seymour Haden there were united a surgeon and an artist of renown. During his medical student days, part of which were spent in Paris, Haden devoted much of his spare time to study in the art schools, less from any artistic inclination than with the object of training hand and eye for surgical work. In after years he laid stress on the importance of such a training for medicine, saying, "How much sooner would the eye accustomed to observe and estimate closely differences of colour, aspect, weight, and symmetry, learn to gauge their aberrations as the signs which make up the *facies* of disease; how much better the hand, trained to pourtray them accurately, be able to direct with precision and safety the course of the knife?" Among his fellow practitioners Haden was noted for an instinctive power of diagnosis, which was attributed often to his disciplined sense of vision. Haden continued his practice as a surgeon until 1887. He pursued the art and study of etching mainly as a relaxation from his professional work, but it is his etchings which form the chief memorial of his life. He first exhibited in the Royal Academy in 1860 under the pseudonym of "H. Dean," but in 1864 he signed his work in his own name. In 1880 he founded the Society (now the Royal Society) of Painter-Etchers, whose president he remained till his death in 1910. In 1905 his distinction was recognised abroad by honorary membership of the Institut de France, the Académie des Beaux Arts, and the Société des Artistes Français. He gained the Grands Prix at the Expositions Universelles at Paris in 1880 and 1900. Though at first treating art as a handmaiden of medicine, Haden became, not merely a doctor with an interest in the beaux arts, but a great artist. He shared with Whistler, his brother-in-law, the claim to being one of the finest etchers of his day, and it is mainly to his work and enthusiasm that the revival of etching in this country is due. It is interesting to note that some of Haden's early drawings appeared in the pages of THE LANCET. In 1862 a report on surgical instruments shown at the International Exhibition of that year was given in our columns, illustrated by accurate drawings. Many of these engravings were from Haden's burin, and though they could hardly claim, on grounds of the subject, inclusion in a collection of his artistic studies, nevertheless they possess value as showing one manner in which Haden employed his skill to medical ends.

PREGNANCY AND TUBERCULOSIS.

FOR almost a generation our attitude towards the combination of pregnancy with pulmonary tuberculosis has largely been determined by the aphorism, credited by Osler to Dubois, that the woman threatened with pulmonary tuberculosis may bear the first accouchement well, the second with difficulty, the third, never. With rather halting logic, this aphorism has often been the excuse for the induction of abortion. The revolt against this course was started a few years ago by Prof. Forssner, of Stockholm, and of late his plea in favour of conservative treatment has found much support. Two of the most recent publications on this subject may briefly be referred to. In the annual report of the chief tuberculosis officer for Belfast for the year ending Dec. 31st, 1922, there is an instructive analysis of the result of pregnancy in 1375 tuberculous women. It was found that tuberculosis was not a very active cause of premature birth, and that among the 6·3 per cent. of the patients who miscarried, other causes than tuberculosis may have been at work. With regard to the effect of pregnancy on the clinical course of tuberculosis, it was found that, unless the disease was in an acute or advanced stage, the normal course of pregnancy was not disturbed. The second publication referred to is a paper by Dr. A. Scherer,[1] of Magdeburg. His analysis of 8520 definite cases of pulmonary tuberculosis in women of the child-bearing age showed that in only a small fraction could pregnancy be convicted of playing a sinister part in the propagation of the disease. In 103 cases the interruption of pregnancy had been advised, but only in 72 cases had this advice been followed. The remaining 31 women objected, partly on religious grounds, to this procedure, and they served as controls to the 72 cases in which the experiment of interrupting pregnancy was carried into effect. Only in 19 of these 72 cases did sacrificing the child prove beneficial or at least harmless. As for the 31 women who refused interference, as many as 22 not only went to term, but gave birth to living children, and when the mothers were examined some time later, they were still in comparatively good health. The lesson of Dr. Scherer's investigations is that pregnancy which occurs frequently at short intervals may, indeed, be injurious as far as tuberculosis is concerned.

[1] Beitr. z. Klin. d. Tuberk., 1923, lxvi., 234.

but that interrupting pregnancy is a remedy of very doubtful value. Another German authority, Dr. Schellenberg, has published in the same journal statistics supporting the views of Dr. Scherer, and in Germany as well as in France the movement would seem to be gaining ground which favours the careful supervision of pregnant women in a sanatorium or other institution during and immediately after pregnancy.

A PROPOSAL FOR DEVOLUTION.

THE rapid development of our knowledge in preventive medicine has had and is having a profound effect on the administrative side of the public health service, as Sir George Newman has pointed out on many occasions. For example, the reduction of enteric fever can be attributed to improvement in water-supply, drainage, sewerage, and refuse disposal, and the control of food, including shell-fish. Still undefeated enemies from the preventive standpoint are respiratory diseases, heart and circulatory troubles, nervous diseases, and cancer. These must necessarily be attacked mainly from the personal aspects, and it is these aspects which have been raised by Lieut.-Colonel F. E. Fremantle, M.P., in a letter to the Prime Minister published recently. Colonel Fremantle thinks that the time has come for a reconsideration of health administration, which will lead to the crystallisation of the views of many people. He makes concrete proposals for changes in central administration which are revolutionary in character, being no less than the abolition of the Ministry of Health and the transfer of its powers to the Office of Works as to housing, Home Office as to local government (presumably including Poor-law work), and the Board of Education as to its health functions. Colonel Fremantle's suggestion, broadly speaking, is that with the development of our knowledge sanitary works of the character of water-supply and sewerage have no longer the importance which they had in the past, and that future progress is to be found in "research (under the Privy Council) and public enlightenment, which surely should come under the Board of Education." In considering his proposals some guidance can be gathered from the lost opportunities of the past. In 1871 Sir John Simon pointed out that the opportunity of placing a new branch of work—sanitary administration—on a sound basis was spoilt by grafting it on to an existing department which was bound to be to its detriment, and it has been abundantly shown that the association of health work with Poor-law administration was a mistake. Colonel Fremantle refers to the need of intelligent use of the human factor in every department of local or national government, as well as in what, because of former deficiencies, have been looked on as works of sanitation—water-supply, sewerage—or housing or hospitals. His use of the word "former" suggests that there is no need for further activity in these matters. Happy would be the area of which this could be said, but even if it were true of the large towns, there is much to be done in the vast tracts of county areas before even modest ambitions with respect to water-supply, sewerage, refuse disposal, and isolation hospitals would be satisfied. These are hardly cognate to the work of the Board of Education. We agree with Colonel Fremantle—that knowledge of prevention of illness and disease has reached the stage when public enlightenment is an even more important factor than it has been at any previous time, and for this the community requires a central department which has preventive measures as its chief function. But the Ministry of Health has since its inception behaved as though prevention were its prime object, and though the Ministry might well be relieved of certain extraneous duties it must remain the central department for all health matters. Decentralisation of some of the functions of the Ministry can only be recommended with stringent safeguards for efficiency and economy.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

XLII.—THE TREATMENT OF THE NEUROTIC.

SOME 40 articles have appeared in this series so far, each and all—with one exception, and that only apparent—dealing either with a definite type of disease or a definite objective symptom. The more impersonal and objective the condition, the simpler is its therapeutic consideration; specific ailments evoke specific treatment. Nothing could be more objective than club-foot, nothing more impersonal than scabies or pediculosis. By comparison, the physician called on to discuss the treatment of the neurotic and neurasthenic is doubly handicapped; he is not sure whether he is dealing with "disease" in the accepted sense of the word, and as a clinician he is frequently in justifiable doubt as to the reality of the symptoms he may be invited to dispel. He labours, however, under no misapprehension as to the commonness of nervous symptoms called neurotic or neurasthenic; were he prone to minimise their significance or ignore their universality, the rush of patients to the latest purveyor of mysterious panaceas, duly chronicled in the daily press, would remind him of his error. Whatever else is the matter is uncertain, this is clear, that there exists an immense amount of nervous ailment, real, exaggerated, or feigned, with which the practitioner of medicine should be able to cope, and for the continuance of which he cannot escape a modicum of responsibility.

It is unnecessary to indicate with greater particularity the nervous symptoms included under neurosis and neurasthenia, and it would be endless were it necessary. There is no kind or degree of ache or pain, of numbness or other paræsthesia, of fear or depression, of fatigue or ennui, of sensitiveness or apathy, of anxiety or moodiness, which cannot be set down to "the nerves" and for which relief will not be sought. No pretence is here made to define the landmarks or to specify their relative importance; no description can be given that will be universally applicable; but the physician in practice soon learns to separate the organic cases from the "functional," though here, as will be indicated later, lies a source of therapeutic trouble.

The Element of Fear.

For the successful treatment of the neurotic it is incumbent on the practitioner to realise in every instance that *there may exist in the patient's mind an element of fear or apprehension.* He has not the knowledge that the practitioner has; he is incapable of interpreting aright the symptoms that have begun to obtrude themselves into conscious notice; uneasy and concerned, a prey to too facile an imagination, especially if he is, as almost all of this class are, constitutionally sensitive, he seeks advice because he is dominated to some extent by foreboding. He may be afraid of having to relinquish his work, of having brought the trouble on by previous indiscretions, of failure on the part of the practitioner to diagnose his condition accurately, of insufficiency in respect of the treatment that will be suggested—in a word, he longs to be reassured about himself and his symptoms.

The physician's aim, therefore, must be to show by his investigation and his demeanour that he recognises the symptoms for what they are, that he is familiar with the course taken by such morbid conditions, and that he is confident a cure is practicable. He must never allow the patient to leave his room on the first visit without having taken definite steps to dispel apprehension. In this respect he might take a leaf out of the book of the "faith healer"; if he is true to his own intellect he cannot, like the latter, facilely deny the reality of disease, yet his optimistic outlook, and his willingness to take the burden of the patient's

woes on his own shoulders, will serve as nothing else to relieve the patient's fears, and to inspire hope.

"L'homme à Petits Papiers."

The successful practitioner, further, bears in mind the neurotic's *desire for a minute examination;* in his anxiety the latter commits a list of his chief symptoms to paper, lest any be forgotten at the consultation. Success in treatment depends equally on the physician's recognition of this fundamental trait in the neurotic mind. Studiously averting his eyes from the clock, the physician must "sit the neurasthenic out." No detail is too trivial to be mentioned, no form of examination otiose. It is a fatal mistake to hurry or harry the neurotic as he unfolds the story of his symptoms, and, as likely as not, his interpretation of them. The wise student of neurotic human nature is never hurried, never has to break off the consultation for a more important patient. *L'homme à petits papiers*, as Charcot dubbed him, has to be handled tactfully if he is to be treated successfully. It must not be supposed the assumption of a mere patronisingly tolerant attitude towards the nervous patient's longwindedness is here advocated; on the contrary, the obtaining of a detailed history must be supplemented by a thorough-going examination, on the physical side no less than on the mental. Such physical investigation is indispensable, for two reasons. In the first place, it impresses—never a negligible factor; and, secondly, it aids the practitioner to avoid the pitfall, already alluded to, of overlooking an organic element in a "functional" case. The neurotic patient loves to be examined; in view of his ready coöperation, why should the physician hesitate? It should be a routine procedure to "vet" the patient completely; each somatic system should be investigated. Many examples crowd into the mind of neurasthenic cases aggravated if not always caused by unsuspected sources of mischief in other systems than the nervous. In particular, the alimentary and urinary systems must be minutely scrutinised. Bacteriological examination is often a sine qua non. When the patient complains of being "out of sorts" and of vague nervous symptoms the search for a possible organic mischief-maker should be as thorough-going as the subjective complaint is slight. It is never wise to pooh-pooh a line of examination suggested by the patient himself. In the case, for example, of the neuropath who thinks there is something the matter with his heart and who has heard of newer methods of research the physician should be prepared to advise recourse to such technique. Similarly, the request for an X ray examination should never be refused. The mental satisfaction of knowing it proves "negative" is surely preferable to the doubt otherwise remaining, doubt which the patient's mental condition only serves to aggravate. The practitioner should play the part of the ferret; he should hunt over all the ground for any scent leading him to his quarry. He is clearly in better position to tackle his patient therapeutically when he has excluded early structural disease, or chronic infection, or glandular dysfunction.

The Value of Tangible Treatment.

The best results are obtained when *some kind of tangible treatment* is proposed and carried out. The doctor who "does something" has the pull over the other who says there is no disease, the symptoms are imaginary, and the condition will cure itself. A good deal of persistent slight nervous ill-health can be set right by physical exercises and baths. A bracing effect on the mind can be legitimately produced by purely physical methods. Sluggishness of somatic function may be responsible for "nerves," "the blues," headaches, depression, in many instances, and can be cured readily enough by appropriate means. One of my old teachers gave all his neurotic patients sulphur baths thrice weekly, knowing that the relish with which they looked forward to "bath day" during a Weir-Mitchell regime was worth much as a mental stimulant. The success of irregular practitioners or "cultists" of all sorts is largely due to their insistence on physical handling of the neuropath. If the end ever justifies the means it is in the realm of neurosis. Most doctors are naturally averse to anything even remotely suggesting humbug, and object to unscientific talk of vibrations, emanations, currents, and what not, but they need not be guilty either of charlatanism or of self-deception in adopting a sanguine attitude as to the efficacy of the mechano-therapeutic procedures they suggest for their cases. Massage and various forms of electrical treatment have always a place in the treatment of the neurotic and neurasthenic, and the most novel is not necessarily the best.

The Simpler Methods of Psychotherapy.

No less important must be attention to the patient's mind, and to his domestic and business situations. It has been well said that patients often need, not a physician, but a divorce, a child, a bank account, a job, a holiday, an aim in life, and the list can be extended materially by all who have to deal with the neurotic, whatever his social position. The error of prescribing a course of treatment which the sufferer is for domestic or financial or business reasons unable to carry out would never be committed were the whole circumstances of the patient discussed with the same care that may have been devoted to the medical aspect of his case. It should be axiomatic on the part of the physician to remember that the best treatment for the neurotic patient is not always the most strictly scientific. Occupational therapy, again, deserves mention in this respect. For many potentially neurotic people the multifarious activities developed by the war proved a perfect godsend, and the ennui of an aimless existence can be countered only by the obvious method of finding something for the patient to do. In the out-patient department not a few cases of neurosis have clearly been originated and intensified by the prevalent unemployment. Any persisting source of anxiety or worry engenders sleepless nights and starts a train of nervous symptoms which can only be dispelled by tackling the mischief at its origin. Hence the fundamental importance of ascertaining what is in the patient's mind. The attention which has been given in recent years to psycho-analysis has to some extent, at least, pushed into the background the simpler methods of psychotherapy at the disposal of every practitioner of medicine. The rational methods associated with the names of Dubois and of Dejerine will prove satisfactory enough in most ordinary cases. To take the patient understandingly over his case, interpreting his symptoms for him, pointing out in what respects he has exaggerated them or misunderstood their meaning, and imbuing him with a feeling of optimism and recoverability, will lead him far on the way to cure. It is a great thing for the constitutional neuropath to learn his own limitations and to order his life aright in view of these; nervous ill-health and nervous breakdowns can often thus be avoided.

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Recent articles in this series are:—

XXV. Puerperal Sepsis, by Lady Barrett. XXVI. Cyclic Vomiting, by Dr. G. F. Still. XXVII. Asthma, by Dr. E. P. Poulton. XXVIII. Traumatic Rupture of the Urethra, by Mr. G. Grey Turner. XXIX. Habitual Constipation, by Dr. Arthur F. Hurst. XXX. Hypertrophied Prostate, by Prof. Charles A. Pannett. XXXI. Infantile Eczema, by Dr. H. MacCormac. XXXII. Exophthalmic Goitre and Other Forms of Hyperthyroidism, by Prof. G. R. Murray. XXXIII. Syphilis in the Woman of Child-Bearing Age, by Dr. Margaret Rorke. XXXIV. Anæsthetic Sickness, by Dr. J. Blomfield. XXXV. Enuresis, by Dr. H. Thursfield. XXXVI. Menorrhagia in Young Women without Gross Lesion, by Dr. J. S. Fairbairn. XXXVII. Chronic Arthritis, by Dr. W. H. Wynn. XXXVIII. Glycosuria in Pregnancy, by Dr. G. Graham. XXXIX. Flat-foot, by Mr. Blundell Bankart. XL. Medical Treatment of Early or Suspected Duodenal Ulcer, by Dr. J. A. Ryle. XLI. Retention of Urine, by Mr. J. Swift Joly.

Special Articles.

THE PANEL CONFERENCE: CAPITATION FEE AND APPROVED SOCIETY CONTROL.

THE annual conference of representatives of local medical and panel committees met at the Central Hall, Westminster, at 10 A.M., on Thursday, Oct. 18th, Dr. H. G. DAIN, Birmingham, presiding. The chairman broke his rule of not giving an opening address to point out that the situation was unique, for on every previous occasion the opportunity of arbitration was open to the Conference after reaching its decisions, whereas this time arbitration had been ruled out in advance by the Minister of Health. The Conference was dealing not merely with the capitation fee of the moment, but with the position of practitioners under the insurance scheme for years ahead. His hearers were the stewards of the traditions of the medical profession, and he put it to them —Are you still to be masters in your own house? Will you accept dictation on the terms of service from some outside body with no interest in medicine and no breadth of outlook? It was, he said, essential to reaffirm the position of 1912, when insurance doctors established their right to negotiate only with the Government. At the conclusion of his remarks the chairman undertook, in view of the likelihood of further conferences in the near future, to withdraw his previous determination not to stand again. The Conference then decided to take at once the latter half of the agenda dealing with remuneration.

REMUNERATION AND APPROVED SOCIETY CONTROL.

Dr. H. B. BRACKENBURY, chairman of the Insurance Acts Committee (hereinafter called I.A.C.) then delivered the following address:

Under the new conditions under which we meet there is a necessity for the revision of some of the recommendations set down on the agenda by the Insurance Acts Committee, and I propose, with your permission, to withdraw the motion which states that the offer of the Minister of 8*s*. 6*d*. for three years is inadequate and that arbitration upon the lines of that of 1920 be asked for, and to combine two of the other motions. [*The Conference agreed to this modification.*]

I now proceed to move—

That the Minister's offer of 8*s*. for five years or of 8*s*. 6*d*. for three years be definitely rejected.

I should like to emphasise the necessity of our considering this very important matter with great calmness. We desire not to work up any particular excitement about it, although a great determination; and we want everybody at this Conference to say what he feels and to point out to us our weak places so that if action is necessary action may properly be taken. Let us know exactly where we stand, what is best to be done, and quite clearly what our actual determination is. This resolution will, I hope, concentrate your attention on the immediate issue. There are all sorts of contingencies which may arise hereafter. It is quite conceivable that we may have to call a special conference, perhaps in the first week of November. But whatever conditions arise after Nov. 1st must be tackled then. I want to make an appeal to those who are here to-day to voice their difficulties and their views so that when the decision is come to we shall be prepared on matters of detail and tactics to sink our own individual views and stand together, and go on the lines which seem good to those who have shouldered the responsibility in this matter. (Applause.)

Four Alternatives.

When we come to the problem which is before us—namely, what are the terms and conditions of service upon which it is proper for the profession to serve the community in this matter?—we find that there are four ways in which that question may be settled. They can be summed up in four words: Submission, negotiation, arbitration, and conflict. The Insurance Acts Committee would have preferred the method of negotiation. So far there has been no negotiation on this matter at all. The Committee was requested to prepare a statement of our case. We prepared and presented it in document M.1. The Minister to that prepared an answer which was to be a final answer. He was approached—quite properly as I think—by the approved societies, as by any other body of persons interested in the matter, and asked to hear what they had to say before he gave his decision. He met them and heard them. Then it was pointed out to him that it was only fair that he should meet us also, and he met and heard us. But at that conference he told us that he had been immensely impressed by the things which had been said to him at his conference with representatives of approved societies, though he declined to tell us what the things were which had impressed him. Certain whispers had come to us as to what had happened, and we found that the things which did come to our notice, if they were what was actually said, were things which it was perfectly easy to answer and absolutely necessary to contradict. But so far as the Minister was concerned, we had no information as to what had passed at that conference, and what points the approved societies had brought forward; therefore we had no opportunity to deal with those statements. Again, he told us that the Ministry's answer to our document had been prepared—I do not mean that it was not subject to alteration—and that in his view it was a magnificent answer, one of the finest documents he had seen, but he deliberately and finally declined to tell us anything that was in it! The Committee was therefore presented with a final judgment on the matter without being afforded opportunity of any conversations with a view to agreement if that judgment were not accepted. That is not what I conceive to be negotiation. (Applause.) We are in this position: Negotiation has not been tried, and, as I shall tell you later, there is only one method left for us to take in order that negotiations may be, not reopened, but may begin. The Committee was prepared to negotiate, and indicated this to the Minister; and anyone, I should have thought, with a spark of statesmanship would have sent for the representatives of the insurance practitioners, at all events in an unofficial capacity, and asked if by putting our heads together we could not arrive at some solution. No such message came. We simply had another answer, telling us that the Minister had said—what he had said! You have that reply before you, and you have before you also the answer which was immediately sent to that, stating our position at the moment. The Insurance Acts Committee will, I am sure, forgive me for having sent that answer, after consultation with Dr. Cox and Dr. Anderson, but without opportunity for consultation with the Committee as a whole. ("Hear, hear.") But that is the position: Negotiations have not taken place; we have asked for them, we have waited for them, and no invitation has come to us.

Negotations not having taken place, and the opportunity for such not having been offered, we turned to the next course at once. This was arbitration. We said, "If negotiations are not going to take place the next thing we are going to ask for is arbitration." We proposed to ask this Conference to authorise us to ask for arbitration. Arbitration is refused. We are told we cannot have it, and as far as the Insurance Acts Committee is concerned we do not propose to press for it, although an expression of opinion from this Conference that arbitration in the circumstances was a possible and suitable method of dealing with the matter might perhaps not be amiss.

Economic Grounds of Refusal of Insurance Acts Committee to Accept Offer of Ministry of Health.

Negotiations being out of the question at the moment and arbitration being refused, we are left with the almost unbelievably simple issue, though the extremely serious issue, of submission or conflict. (Applause.) And the Insurance Acts Committee asks you to endorse its opinion, which it makes to you in the form of the recommendation I am proposing, that we will not accept the offers which have been made. (Loud applause.)

On three grounds we cannot accept these offers. In the first place, the offers are economically unjust. I do not take these points in the order of their importance, but in the order in which it is convenient for us to consider them at the moment. I am not going to labour this economic point. We set out our full case in document M.1 to the Ministry, and from beginning to end of the Minister's answers there has been no real attempt to meet the facts and the figures and the arguments and the conclusions which we reached in M.1. All sorts of other things have been taken and said, but there has been no attempt to contradict or show errors in the facts or calculations which we have submitted to him on the economic issue. I will put it to you in one way which has not been over-emphasised. We will take the figure of 7*s*. 3*d*., which was our capitation fee in pre-war—indeed up to mid-war—times. It has been generally agreed between us and the Ministry that 25 per cent. of the remuneration might well be regarded on the average as payment for practice expenses. That would take 1*s*. 10*d*. off the 7*s*. 3*d*., and leave us with 5*s*. 5*d*. as our former net remuneration expressed in terms of the capitation fee. Our practice expenses to-day may definitely and properly be

taken to be 50 per cent. in excess of what they were in 1913–14. If we take 1*s.* 10*d.* plus 50 per cent. and deduct this from the proposed capitation fee of 8*s.* 6*s.* we arrive at a capitation fee of 5*s.* 9*d.* Expressed, therefore, in net terms, we are offered to-day a capitation fee of 5*s.* 9*d.* as against a capitation fee of 5*s.* 5*d.* in the earlier days; an increase of 6 per cent., as against an increase of expenditure which has to be met out of this net remuneration of 57 per cent. according to Prof. Bowley, or of 75 per cent. according to the official figures which are issued month by month. Our contention that it was by no means certain that this index figure representing the cost of living was going to be a continuously falling figure is borne out by the fact that in each of the two months since we made that prophecy that index figure has gone up, and it is to-day 175 as against 169, at which it stood when we made the proposition. We are faced, therefore, with an offer which on purely economic grounds would raise our spending amount by 6 per cent. as against a reduced spending power of 57 per cent. or of 75 per cent. as the case may be; and that is in addition to and apart from the reduction in the standard of living which is imposed upon us all by the enormously increased taxation. We say, therefore, that on the economic side alone such an offer is unjust, and it is important for us individually that we should have such a remuneration as will make it possible for us to live in the way in which we ought to be able to live and to bring up our children so educated that they will be able to take a position in life not less than that which we have been able to take ourselves.

Necessity for Good Standing of Panel Practice in the Medical Profession.

But, after all, there may have been considerations which would bring home to some men's minds a doubt as to whether they should or should not accept the figure of 8*s.* 6*d.* What I say to you this morning is that the economic argument, while we do not minimise it in the least, must now have a subordinate place. There are other things which make us feel we have no option but to reject this offer. In the first place, we believe that the position which has been opened up before us in these proposals is nationally unsound and socially dangerous. Some of us believe wholeheartedly that a national health system, founded upon an insurance basis, is a good policy for the nation; but obviously if there is to be a national policy in that direction and on those lines it must be such a policy as will enable the whole medical profession heartily and willingly to coöperate in it, and not such a method as will give to the industrial population, whether in town or country, the services of doctors relatively inexperienced or driven to accept what they do accept by sheer economic need, and will make those who have been more successful endeavour to get out of the service at the earliest possible moment. It would be a disaster to allow a national system, paid for nationally and arranged nationally, to go on, which only left in the industrial areas of this country those doctors who are forced to go there, instead of leaving in those areas (as in other places) a considerable number of willing practitioners who will serve as well and as satisfactorily, and with as great a care for individual and social welfare, in those areas as in other communities more fortunately situated. (Applause.) To accept an offer of the present kind would result in that unfortunate state of affairs. (Applause.)

Who Represents the Real Interests of Insured Persons?

The third reason why we are unable to accept this offer, in the opinion of the Insurance Acts Committee, is because the circumstances in which the offer is made necessitate the protest of an honourable and independent profession. (Loud applause.) There was a conference of representatives of approved societies yesterday, and at that conference a very wise speech was made by Mr. J. H. Thomas, M.P.—a wise speech, I mean, considering the point of view from which he had to speak, and the audience to which he had to address his remarks. If we had to deal with people such as Mr. Thomas I have no doubt we should be able to arrive at a peaceful solution. But there is this fundamental point which is a fallacy in Mr. Thomas's speech—he said that the conference he was addressing was in a position to speak for every section and class of insured persons. Mr. Thomas appealed to the doctors not to disgrace the great heritage of their profession and engage in a conflict with 16 million people less fortunate than themselves. (Laughter.) Our conflict is not with those people, but on their behalf. Of course, it is the rôle of approved society officials to represent themselves to Ministers and to impress upon Ministers and upon the public that they represent the 16 million insured persons. But we know here that the attitude of the enormous mass of insured persons towards approved societies and their officials, where it is not one of indifference, is one of antagonism. (Applause.) The insured persons have been compelled to join the societies in order that they may reap the full benefits of the premiums they are compelled to pay, but in coming to us to help them we find that it is very common for them to regard their approved society as a remote entity and the society official as a person continually trying to do them out of their just rights. ("Hear, hear.") It is to us they come when they want help, and we can tell the Minister and the approved societies that so far as real knowledge of insured persons is concerned and real help given to insured persons in connexion with the problems of national insurance which they, very naturally, incompletely understand, it is to the doctor they come most of all, and, I rather suspect, next to the doctor, the clerk of the insurance committee. They do not get the help they might get from the officials of approved societies. But the societies, having adopted that rôle, now assume to themselves the position of being the community. They have in so many words, through their spokesman—there must be some of them who do not like it—claimed that the Minister has no "right" to alter the terms and conditions of service, that he has no "authority" to negotiate about a capitation fee without their permission, and that they and they alone are the persons who can properly say what are the conditions of service and the terms. There is no ambiguity about it. The statements of their claims which I have just made are quotations from speeches made by those who speak on behalf of the approved societies.

Then, Sir, we say that from the beginning the approved societies have taken the narrowest and lowest commercial view of the medical profession, and that they claim in effect to get into the position of being the employers, the masters, the paymasters of the profession. That is a position which we fought in 1911, and it is one of the things we won. Parliament by its deliberate judgment during the passing of the Act of 1911 took out from the Bill, as it then was, the power of the approved societies as such to interfere with the administration of medical benefit, and placed it in the hands of other bodies. It has been discovered that, in respect to that Act and Acts which have been passed since, the approved societies have in fact got into a position which was not exactly foreseen, and which on technical grounds they are using for all they are worth in order to achieve by this other method the position they lost in 1911 of being the controllers and dominating factors in this service. We are willing to negotiate with the properly constituted representatives of the community as to what the terms and conditions of service shall be, but we shall never submit to the views which the approved societies have taken of the national needs. We believe them to be narrow views, not to the advantage of insured persons, and not conforming to what ought to be a really effective national insurance service. We will never consent to take those narrow views, nor will we consent to be made subservient to any particular section of the community, though we are still willing to negotiate with the representatives of the community as a whole.

Difficulty of Negotiation with Approved Societies.

There are one or two other points in connexion with the approved societies which I should like to take. We have heard statements made as to what their position is with regard to the National Health Insurance Fund and with regard to the effect any increase of our remuneration above 7*s.* 3*d.* would have upon that fund. We have discovered that in spite of all our attempts to arrive at agreements with representative members of approved societies, whom we have met in their representative as well as in their individual capacity, it is futile to make any arrangement with them or to come to any agreement with them, because directly the opportunity occurs they go back upon the arrangement and do not adhere to the agreement. There is one gentleman who has been very busy speaking for the approved societies, Mr. Rockliff, and there is another who has lately stepped into the fray—I am sorry to say—Mr. Canter. Mr. Rockliff, in a letter to the *Times*, made the statement that if more than 7*s.* 3*d.* were taken out of the contribution for the doctors it could only be at the cost of depriving the insured population or of reducing the sum for benefit obtainable by them out of that contribution. Again, he stated that if 8*s.* 6*d.* were given to the doctors, the whole additional surplus expected to be shown would be appropriated to the advantage of panel doctors instead of going to increase the benefits to the insured. Mr. Rockliff stated, "It [the Minister's] is a most improper proposal." Mr. Canter repeated the protest he made against the approved societies paying more than 7*s.* 3*d.* for the kind of service given by insurance practitioners, and he added a further protest against the doctors being subsidised out of what the approved societies called the "hidden millions." I have in my hand a document in which this paragraph occurs:—

"We agree that the service would be such as to justify a capitation fee to the doctors of substantially the present amount [that is, 2*s.* 6*d.*] without ruling out of the present consideration any claim by the medical profession for something beyond this, and we have satisfied ourselves that the National Health Insur-

ance Fund in the aggregate contains sufficient money to meet the cost without lowering or endangering the provision of the other benefits, whether normal or additional, to which insured persons are entitled."

That is signed by Mr. Rockliff—and Mr. Canter! Those statements have been made repeatedly, and they seem to me to be in absolute and direct contradiction to the statement which was made by the same men in their representative capacity in a document embodying the result of discussions we had had with them. There were those who told us at the time that we were wrong in having those discussions. I confess I am inclined to believe now that the people who told us so were right. ("Hear, hear.") At all events, the fact that we did have those discussions showed the extreme lengths to which we were prepared to go to arrive at an amicable conclusion. And this is the result.

It may be remembered that towards the end of last year the approved societies were engaged in a campaign to prevent their administration allowance, which had been 4*s.* 10*d.*, being reduced to a lower figure, and it has been interesting to look through the files of their journals and read their speeches, and to find how closely their arguments correspond with some that we are using to-day. In the first article in the *National Insurance Gazette* for Sept. 23rd, 1922, we read:

"On this point—the point that the present administration allowance to approved societies should be continued for another twelve months—we must say at once that it will be idle for approved societies to then contend that the doctors' capitation fee should be reduced to something like the pre-war figure while approved societies should have their allowance maintained at a larger figure."

It is still being continued, and, idle or not, the contention is made that the doctors' fee should be reduced. Again, in a later number of the same publication:

"I feel sure that the officials who have the working of the approved societies will resent any reduction from the present administration allowance, and that whatever might be gained in pounds, shillings, and pence would be lost by a more or less unwilling service. The proper administration of health insurance requires the spirit of public service and social work, and often this evaporates in the presence of a real grievance about pay."

Again, the approved societies are now contending that any extra money above 7*s.* 3*d.* which is received for the doctors' capitation fee is so much withdrawn from the additional benefits and other benefits which insured persons will be able to enjoy. The point was, of course, made in some quarters that if they maintained the administration allowance at a higher figure than was necessary there would be less money in the fund to supply insured persons with additional and other benefits, and the statement made by the most authoritative person in the approved society world at the National Conference of Industrial Assurance Approved Societies last December was this:

"I go further and say that it is wrong for the societies to be bolstered up as regards the work of administration by and out of private moneys when at the same time increased benefits are being given. There is a good maxim which says, 'You should be just before you are generous.'"

That shows the position of mind of exactly the same people who are talking in that way about our attitude to-day when they are faced with the possible reduction of their own salaries and a certain moderate reduction of administration allowance. It did not seem to them iniquitous that they should be paid a proper fee, despite the question of additional benefits which might otherwise be given to the insured person. To-day the only argument which they are using, and which is going home to the public at all, is that we are trying to steal from insured persons moneys going to their benefit, and appropriating those moneys into our own pockets. That is completely answered by the statement which they themselves made when the argument was used against them less than nine months ago. (Applause.)

I will pass from this, and point out that all this year we as your representatives—the representatives of insurance practitioners—have been trying to the utmost to cultivate friendly relationships with the officials of approved societies and others who have a legitimate and proper interest in the smooth working of the insurance system. We have met every criticism which they have offered, and have made constructive proposals for improving the service. They have acknowledged to us over the table repeatedly that all the things which they have considered important have been given by us and met by us in a perfectly proper way in the new terms of service we have arranged. But there has not been one word of public acknowledgment of that by the representatives of the societies since this controversy began. Indeed, all the implications have been that the service in their opinion has been a bad one, that no improvements are going to be made. They have not had the honesty to say that these improvements have been agreed to, offered and suggested in many cases by ourselves. In that atmosphere what can you do more to cultivate friendly relationships or an amicable agreement? ("Hear, hear.")

The Way to Obtain Negotiation.

The position is extremely simple. The Minister has been impressed by what the approved societies have told him: on the one hand that they have immense political pull and power, on the other hand that the doctors—I am quoting—"have not an ounce of fight in the lot of them" ("Oh!"), and that he can safely ignore the medical profession in any negotiations which take place between him and the societies and in any decisions he may come to. As to the proposals now made, however economically unjust, however socially disastrous, however detrimental to the honour of the profession, we must either submit and accept them immediately, or we must take up the only remaining solution of conflict. (Loud applause.) There is no alternative. Arbitration is ruled out, negotiation without conflict is ruled out. We have made a last attempt to see whether it is possible to negotiate with the Minister in his responsible capacity, and we have been told in a way which leaves no doubt whatever that a condition precedent to any resumption of negotiations is that we must show the Minister that he cannot get, on his present terms and in present circumstances, the satisfactory service which he desires. Therefore, in the opinion of the Insurance Acts Committee—the unanimous opinion—we are bound to enter upon this fight. To submit now would be to submit to what is for us economically unjust, for the nation bad, and for the profession fatal. (Applause.) But it is for you to decide to-day whether that is the better of the two alternatives. To accept leaves us in the position I have indicated; to fight and to fail would leave us in that position also; there is only one thing to do, in the opinion of the Insurance Acts Committee, and that is to fight and to succeed. (Cheering.)

Let me tell you what I mean by success in this fight. The fight will be won in all essentials when we have got the requisite number of resignations. The mere fact that we have succeeded in doing what we set out to do will have won this fight in all its essential respects. If we do not do it, our position as a fighting force is, of course, gone for evermore. Not only that, but if we do not do it, our position as a negotiating power is reduced to its lowest level for evermore. We leave the approved societies in the field with their claims (however unsubstantial) acknowledged, impressed not only upon their own minds but upon the minds of the governing authorities and the public of this country. The only salvation for us is to fight and to succeed. If we get the requisite number of resignations we shall be able to go to the Ministry and show that they have been secured. We can say to the Minister, "Are you prepared now, now that we have shown the approved societies that they are wrong in their estimate of us, and that you have been wrong in your doubt of us—are you prepared now to open negotiations around a table in order that we may arrive as sensible men at some peaceful solution?" I am absolutely confident that the Minister's reply to that request will be, "Yes, in this position I am prepared to negotiate." Then we shall go in to negotiate. Those negotiations must result in an offer somewhat better than the present one, and the result will show that we have been standing up for the insured persons' interests, the national needs, and the honour of the profession. We shall be able to go to the Minister and negotiate and come back to you with the result of those negotiations, in the form of a proposal which you may be able to accept or may not be able to accept, which we may be in a position to recommend you to accept or may not be in a position to recommend you to accept; but at all events our fight will be won, and the Minister and the public will realise that we care much less about sixpence here or sixpence there than we do about ensuring a good national service and maintaining a free and honourable profession. (Loud and prolonged cheers.)

DEBATE ON DR. BRACKENBURY'S STATEMENT.

Dr. Brackenbury's address was warmly applauded and at its conclusion it was decided to send a substantial précis to the press and a copy to every panel practitioner in the quickest possible way. The motion:—

That this Conference definitely rejects the offer of the Minister of Health of 8*s.* for five years or of 8*s.* 6*d.* for three years—

was then carried unanimously, and a rider regretting that the Minister had not seen his way to accept arbitration was accepted with few dissentients. A further resolution was then passed leaving all details of negotiations regarding capitation fee in the hands of the I.A.C., and pledging the Conference loyally to follow the instructions issued by that Committee, which is the executive body.

The Position of Rural Practitioners.

Dr. Brackenbury then moved that any agreement with the Ministry or the Scottish Board on the question of the capitation fee be subject to agreement being arrived at with regard to the special circumstances of rural practitioners. He pointed out that in the lowlands of Scotland a relatively small sum of money was set aside for certain exigencies of rural practice, such as to enable a practitioner to obtain a locum during study absence, and that the position of rural practitioners might be met by readjustment of the mileage grant within the two-mile area, and further consideration for the time element in rural practice. In England the Minister's sympathy had not yet eventuated in action. This motion was carried unanimously.

The National Insurance Defence Trust.

The present position of trust funds was stated, Dr. Brackenbury expressing his conviction that they would suffice for a short fight, while the subscribers could and would no doubt produce more money if and when required. He assumed that hard cases would be dealt with as they arose, and that not all legitimate claims would in fact be presented.

TERMS OF SERVICE, 1924 AGREEMENT.

On behalf of London it was moved, that in the case of an insured person desiring to transfer from the list of one practitioner to that of another practitioner, he should be required to sign the medical card in the appropriate space (or where unable to write, to make his mark in the presence of a witness) and that insurance committees should not accept any cards not so completed. This would safeguard, if not entirely prevent, trouble in regard to touting. The motion was carried.

A motion by Walsall that a doctor should not be able to accept a panel patient who was being attended by another doctor during an illness was lost. It was felt that the situation was one not likely often to arise.

Medical Service Subcommittees.

Newcastle-upon-Tyne moved that no body on which laymen sit should have power to hold inquiries as to the correctness of any treatment given or advised. It was, however, pointed out that the usual practice of Medical Service Subcommittees throughout the country is to defer to the medical members of the committee in purely professional matters, and the motion, though passed, was referred to the I.A.C., as also a motion by Bury to obtain the power to request witnesses to sign a declaration of the truth of their evidence. A motion by Buckinghamshire asked the I.A.C. to take all possible steps to arrange for deputies being appointed for members of these Subcommittees. While it was often difficult for busy practitioners to attend regularly, the approved society officials were always present. It was doubtful whether deputising at present was strictly legal. A representative created mirth by stating that, in his area, if only one medical member was present, he faded away, so that the subcommittee could not hold inquiry.

Certification.

It was agreed to press for a verbal change in the new form of voluntary certificate, which should read "Insurance practitioners, not being under obligation to issue certificates, are *entitled* to charge fees in respect of the issue thereof," instead of "are *not debarred* from charging fees," as suggested by the Ministry. The Conference unanimously supported the I.A.C. in their refusal to accept the obligation of stamping certificates with the name and address of practitioners.

Charging of Fees.

A motion was tabled by Bury to the effect—

That this Conference is of opinion that while an insurance practitioner ought not to charge an insured person on his list a fee for any service to which the insured person is entitled, yet he should be free to charge an insured person, who is on the list of another practitioner, for all services rendered, except in the case of emergency.

Dr. Brackenbury pointed out that this was one of two important matters in which agreement had not been reached with the Government. Approved societies took the view that "under no circumstances whatever" should an insurance practitioner charge a fee. The I.A.C. had reached the conclusion that the matter could not be dealt with simply by legal enactment. Two classes of legitimate claim presented themselves: (1) that of the patient who, without desire to change his panel doctor, wished to have the opinion of another practitioner on the panel; and (2) that of the person unwillingly insured under the Act, who refused altogether to take advantage of its provisions. This and other resolutions of cognate purport were referred to the I.A.C.

ORGANISATION.

After discussion of a motion by Kent, that all energies should be immediately devoted to a comprehensive Parliamentary campaign, supported by every possible action through the press, a careful statement of the case against the approved societies was made by Dr. GORDON WARD, in which the following were set out as Points for Discussion with Members of Parliament, Employers, Insured Persons, and Taxpayers.

1. The funds raised by the authority of the National Health Insurance Acts are generally held to have been primarily intended to meet the cost of a weekly payment during sickness (sickness benefit) and of the provision of medical attendance (medical benefit). Maternity and sanatorium benefit were also included from the first. It would appear that all these benefits ought to form a first charge on the funds. The approved societies dissent from this attitude and pretend that they are entitled not only to claim as their own any surplus which may accrue but also to decide how much shall be set aside to meet the primary charges named. They commonly assert that the sums required for the adequate remuneration of doctors can only be secured by depriving insured persons of other benefits—e.g., hospital, dental, and optical—to which they are entitled. It is impossible for practitioners to accept the position of residuary legatees who can only benefit when all other claims have been met.

2. The rates of contribution at present exacted from employers and insured persons are in excess of those needed to satisfy the primary requirements of the Acts as set out above, and very large surpluses have been accumulated. In the statement of balances issued in 1923 but for the year ending Dec. 31st, 1921, the total balances shown are £124,075,481. Of these £56,704,084 appear to be paper credits only and should probably be subtracted from the total, leaving balances at that date of £67,371,397. The accounts are not in all respects easy to interpret, but it cannot be doubted that further credits have accrued since 1921 and that the whole represents a very severe tax on industry at a time when any such tax ought if possible to be avoided.

3. The societies claim that all surplus funds are to be regarded as the property of various individual societies and that they are entitled to administer them in a way which, in fact, provides substantial additional benefits for some, while others (who are compelled to pay the same contributions) obtain only the statutory minimum of benefit. Although their claim can be supported by a sufficiently ingenious reading of the Acts, it remains certain that the present developments were not contemplated when the original Act was passed and that a system providing unequal benefits but compelling equal contributions is absolutely indefensible.

4. The ninth report on the work of the National Insurance Audit Department issued in 1923 and covering the audit for the year 1922 shows that in the period under review 9917 certified accounts of approved societies and branches were issued. The payments involved amounted to £14,560,682. Of these 9917 accounts no less than 4766 were certified subject to reservation or, in other words, showed irregularities. The number of cases in which fraud seems to have been in question was only 54 and the total sum involved (so far as ascertainable) only £4068, but it is evident from these figures that very large sums of money raised by compulsory contribution from the taxpayer, the employer, and the insured person are being dealt with in a way that would not for one moment be tolerated in any commercial undertaking.

5. The organic connexion between the State-provided or "approved" societies and their parent industrial and profit-making concerns (which connexion consists in the use of the same offices and officials and agents for both sections) is so

close that it seems doubtful whether the advantage of State aid can possibly be confined to the State sections. It will be noted that in the report of the Audit Department above referred to there is a "Statement of amount of payments (excluding investments) audited in the year 1922," and this shows a total of benefit payments amounting to £11,103,828. The total payments for administration were £3,456,854, so that in round figures every £100 of benefit cost £30 to distribute. It would appear probable that a less expensive system of distribution could be devised by stricter methods of control.

6. The so-called "representation" of insured persons by the approved societies does not, in fact, entitle them to speak on their behalf, inasmuch as insured persons have no sort of effective voice in the affairs of the societies to which they are forced to belong as a condition of obtaining benefit. Although a complaint against a doctor is very properly subjected to full investigation, it remains anomalous that the very much more frequent complaints against approved societies remain uninvestigated and the complainants unsatisfied—a fact to which every panel doctor can testify, since the insured person usually brings his complaint to the doctor and asks his advice as to how delayed or refused benefits can be obtained.

7. The existence of a class of "post office" or "deposit" contributors who are deprived of the benefits of insurance is impossible to defend. These persons are only to draw out as benefit the precise sum which each individual has paid in. Many deposit contributors remain so from choice since they are persons who have no desire to be insured and do not intend to avail themselves of benefits but are nevertheless technically liable to pay contributions. But this class also contains those who are too ignorant to face the formalities necessary to join a society or who have been refused admission to societies owing to their being in indifferent health and so likely to prove a charge upon the funds. These latter are often persons of deplorable social position and almost entirely devoid of education, and are thus particularly in need of that assistance from the State which the Acts were meant to provide but which is nevertheless withheld from them. Their position could be remedied by the formation of a State society, but if any such society were formed it would probably attract the majority of the insured population and thus damage the position of existing societies. It may be that this is the real reason which has led to the continued existence of the deposit contributor class.

8. Purely destructive criticism is of little avail unless it is also possible to point out the required remedies. It seems evident that the State ought to resume direct control of the expenditure of all surpluses accruing under the Acts. It would probably be necessary to retain the personnel of the societies as distributors of benefit, but they should be subject to at least the same degree of supervision and control as is found to be desirable in, for example, a sub-postmaster or any other part-time employee of the State. The whole of the anomalies pointed out above are directly traceable to this lack of control and would be eliminated almost automatically by the re-assertion in connexion of the National Health Insurance Acts of the old principle that there should be no taxation without representation. It is apparent at the moment that, for example, the employer who finds much of the money has even less share than the insured person in determining how it shall be spent.

Following Dr. Ward's statement, it was decided with but three dissentients to appoint a committee forthwith to conduct a publicity and Parliamentary campaign and report to the I.A.C. Membership of this committee, suggested from the chair, was as follows: Dr. H. B. Brackenbury, Dr. J. W. Bone (Luton), Dr. F. G. Layton (Walsall), Dr. C. F. T. Scott (Middlesex), Dr. G. C. Garratt (Chichester), Dr. E. A. Gregg (London), and Dr. Gordon Ward (Kent). A motion by Liverpool to the following effect was referred to this Committee to consider:

That this Conference strongly urges every practitioner to make individual protests to the Minister of Health, the local Member of Parliament, and to any political association to which he may belong, and instructs all Panel Committees to organise protests in their separate areas.

The Conference rose at 6.30 P.M.

ELSIE INGLIS MEMORIAL.—The corner stone of the Elsie Inglis Memorial, The New Hospice, Spring Gardens, Abbeyhill, Edinburgh, was laid on Oct. 18th by Viscountess Novar. The hospice occupies a site overlooking King's Park, with outlook to Arthur Seat and Salisbury Crags. There is accommodation for 40 beds, and the hospice, when completed, will form a valuable addition to the maternity and child welfare institutions in the city, and will be a fitting memorial to a brave woman.

THE PANEL CRISIS:

THE SITUATION IN THE MANCHESTER DISTRICT.

(FROM A SPECIAL COMMISSIONER.)

ON the principle that what Lancashire thinks to-day the country will think to-morrow, I visited Manchester and Salford during the week-end, with a view to finding out the attitude of panel practitioners and others in face of the failure of the insurance medical service to obtain satisfactory terms and conditions of service for 1924. Manchester has a panel of some 250 practitioners, with another 105 or so in Salford, and although the executive officers of the panel themselves are for the most part busy practitioners, they were ready to talk over a momentous position. I found them unanimous practically and firm. The firmness was quite unmistakable. Whatever the outcome, the doctors in the area have decided to grasp the opportunity of freeing themselves from friendly society control. Not that there has been any difficulty locally for years past in working the Insurance Acts harmoniously. No doubt everything is made easier by the system of payment on the principle of visits paid, the doctors' quarterly accounts being cut down in Manchester to a basis of average visits, and in Salford to an artificial limit conveniently described as "the bogey figure." The system has admitted not only of free choice of doctor, but of free change of doctor as often as desired, with the complementary right of the practitioner to get rid of an undesired patient. All the parties to the local working of this scheme meet on the Insurance Committee, and have found no difficulty in composing their divergencies by round-table conference and mutual give-and-take. Complaints referred each year to the Medical Service Sub-committee scarcely run into two figures. The chairman of the Insurance Committee made it quite clear last week, and carried his National Association with him, that it is not for insurance committees to take sides in the quarrel, their duty being to fight for an adequate service. The fear of the doctors is quite definitely that the friendly society officials have reasserted, or have endeavoured to reassert, their right of controlling the conditions and remuneration of medical service at the centre; the fear, in fact, that the control by friendly societies of medical benefit, which was definitely taken out of their hands by the Acts of 1911 and 1913, was again to become operative. This is a sequel to the arrangement made by Sir Alfred Mond in sanctioning the payment out of accumulated contributions of part of the capitation fee when the Exchequer grant was withdrawn by the Geddes axe. Sufficient resignations had already been tendered by the end of last week to make it evident that the required quota would be reached, and Manchester is settling down with quiet and grim confidence, not altogether unmixed with satisfaction, to a fight in which the memories of 1912 are still present. I spoke with the first practitioner to go on the Manchester panel in 1912; he was quite prepared if need be to come off in 1924.

The plan of campaign on Jan. 1st, 1924, is quite simple. Manchester and Salford could easily have organised a scheme for the collective treatment of insured persons by the local profession, on the analogy of schemes in full working order at Leicester and Southampton; but to do this would be to impose great difficulty on surrounding areas where organisation is less perfect, and the decision has been taken to revert on Jan. 1st to the conditions of private practice. No patient will be accepted for a lesser fee than 3*s.* 6*d.* in Manchester, but no practitioner will refuse to treat a case of urgent illness without fee, wherever the necessity should arise. Hardship would, it is felt, not be so manifest in Manchester, where, in spite of a lamentable proportion of unemployment, the working class on the whole is not badly off. Any

tendency to refer patients wholesale to the part-time Poor-law medical officers would not prove acceptable to these practitioners, who are also without exception on the panel. The hardship would fall rather on individual doctors, especially the comparatively few who are dependent solely for their existence upon a large panel. Although no doubt the individual fee per patient would be higher—for in the Manchester scheme practitioners are actually paid only some three-fourths of the sums to which they are entitled on the basis of the model fees—yet attendances would certainly drop off in greater or less degree, young people of both sexes generally would be loath to come if a fee was to be charged, minor ailments would remain unattended, and in fact all the early preventive work which has been growing up unobtrusively under the Acts would drop out.

How long would such a struggle last? Manchester is not optimistic in regard to the Minister yielding forthwith, even when evidence of the determination of the medical profession is submitted. But insured persons will, no doubt, bring pressure upon their friendly societies to come into line, even before the seriousness of the position is brought home to them in the New Year, for the doctors' case already has widespread sympathy among insured patients, "Surely, Doctor, you are not going to take less than you do now," being frequently heard. The difficulty is realised in stating an issue which cannot readily be explained in popular terms. No doubt 8*s*. 6*d*. is regarded in the Manchester area as an insufficient sum for services rendered. So much is this the case that, as was to be feared, a number of the practitioners with smaller panels—men whose presence on the lists is particularly valuable in proof of the all-round quality of service—have decided in any case not to renew their agreement with the Insurance Committee; but it is not easy, in an area where feeling is friendly all round, to evaluate the fear of central interference from the approved society representatives, which Manchester is as sensible to as practitioners in less organised districts.

Can the resistance be effective? There is, I gather, a large local relief fund quite apart from the National Insurance Trust Fund, from which the hard cases would be relieved, and on the financial side it is felt that the Minister of Health is unaware of the strength of the position. Experience has shown that it is not difficult to keep up a loyal standard of a minimum fee per visit or surgery attendance, although more difficult to do so in the case of any contract arrangement.

A curious difficulty arises in enlisting the sympathy of the women for the insurance principle, for, even in an area where the serious aspect and determination of the Mancunian at once strike the southerner, women are found not readily comprehending that principle. When in health they are apt to resent the payment of instalments which do not seem to them to result in any material return. At any rate, the domestic servants in Manchester—for there still appear to be some—are hostile to medical benefit under the Act, and this spirit has been in evidence often and elsewhere. But these comprise the only section of the community, it would seem, who desire to "scrap the Acts." In Manchester the medical men and the public alike accept the insurance principle, the medical men only wanting to have proper conditions of service.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Cameron Prize Lecture: The Story of Insulin.

Prof. McLeod, of Toronto, delivered the first of two lectures on Oct. 16th in the University New Buildings, Edinburgh. He said that he proposed to give a review of the investigations which had led to the introduction of insulin as a recognised therapeutic agent. The problem with which they were concerned was the nature of the fundamental factors which control carbohydrate metabolism. Prof. McLeod briefly outlined the well-known facts of the breaking up of carbohydrates into carbon dioxide and water, and how this was influenced and controlled by an internal secretion of the pancreas, to which Sir Edward Schafer gave the name insulin. He told how he and his co-workers had eventually managed to obtain this substance free from proteolytic enzymes by the process of acid-alcohol extraction of fractional precipitation. The next step was to study the effects of insulin on experimental animals. In depancreatised dogs insulin replaced something which was absent and controlled over-production of sugar, so preserving the balance in the blood. In normal animals it was a toxic agent, having, as it were, the effect of an overdose. The advantage of using depancreatised dogs rather than experimenting on diabetics was that the latter are not completely depancreatised and consequently an unknown factor is involved. Best and Banting in their first experiment obtained a definite fall in blood-sugar and this was accompanied by a lower output of sugar in the urine, so that the sugar was used by the animal. They next set to work to find out by comparing intake with output how much glucose a unit of insulin could cause to be metabolised. Thus, if a dog on an intake of 145 g. of sugar used 105 g. with 20 units of insulin and 135 g. with 30 units, the additional insulin has presumably accounted for the extra 30 g. of sugar used, and the glucose equivalent, as it is called, would be 3. It was important from the clinical standpoint to determine this glucose equivalent. It was not constant in any one case, and was found to be considerably lower in diabetics than in the experimental animals. It became progressively smaller as the dose of insulin increased according to a definite curve, so that insulin in this respect behaved as an enzyme. This observation suggested that clinically a slow absorption of small amounts as from inunction or the alimentary tract was more desirable in obtaining the maximum effect than the present hypodermic method. The glucose derived from carbohydrates was apparently more easily metabolised than that from other sources, which possibly accounted for the lower glucose equivalent in diabetics who derived their supply to a considerable extent from protein. Insulin also acted on the other end of the chain, bringing about the deposition of glycogen in the liver and muscles. It acted, too, on both ends of the fat metabolism chain, reducing the lipæmia and fat excess in the liver at the one end and at the other bringing about the complete oxidation of butyric acid. The lecturer pointed out that this latter action was indirect and quoted the well-known illustration of the fats being burnt up in the carbohydrate fire. The ketone bodies in diabetes might be regarded as the poisonous smoke of incomplete combustion. The influence of the pancreas on fat metabolism was a problem of great interest and importance.

In the second lecture Prof. McLeod began by discussing the effect of insulin on experimental forms of hyperglycæmia. These he classified in three groups: (1) nervous, (2) asphyxial, (3) pharmacological. Claude Bernard's classical experiment of puncturing the floor of the fourth ventricle furnished an excellent example of the group (1). There was also in this group sympathetic stimulation, either direct electrical or indirect by adrenalin. Ether and phloridzin respectively were examples of the groups (2) and (3). Insulin controlled all these forms of hyperglycæmia. That this was not a simple reaction in the blood was indicated by the fact that much more glycogen was recovered from the liver of an animal to which insulin had been given along with epinephrin than from that of one which had had epinephrin alone. An interesting and at present inexplicable fact was that only 60 per cent. of injected glucose was recovered in the body 15 minutes later. It would seem that insulin brought about the formation of an intermediary substance between glucose and the end-products, carbon dioxide and water, which with our present analytical methods we are unable to detect. Prof. McLeod went on to deal with the effect of insulin on normal animals. In well-fed animals, in which there was a plentiful store of glycogen, the

blood-sugar curve returned in about three hours to its normal level, whereas in starved animals, which lacked this store, the return was very much slower. This had a practical bearing in indicating a possible danger in the insulin treatment of severe diabetics. The two curves corresponded in the first half-hour, which might seem to indicate that the process takes place in the blood. But in vitro the glycolysis curve was unaffected by insulin. The effect would seem, therefore, to be produced in the tissues, and this was supported by the fact that insulin greatly increased the rate of glycolysis of the perfused mammalian heart. It was as if a vacuum were created in the cell and filled up again from the blood. This "vacuum" was in all probability the result of increased carbohydrate metabolism, though the experimental evidence of this was not absolutely unimpeachable. Non-insulin normal rabbits showed higher storage of glycogen than insulin ones. The increased carbohydrate metabolism resulting from insulin led to a sparing of protein metabolism. The lecturer went on to speak of the source of insulin. He reviewed the known facts concerning the islets of Langerhans. In the lower animals, such as the skate, the islet tissue is definitely arranged along the ducts and appears to be an outgrowth of the epithelium of the ducts, whilst in some fishes the islet and zymogenous tissues are quite separate. In these the islet tissue was present as a number of small glands, one of which, larger than the rest, was known as the principal islet. As much as 25 units of insulin had been obtained from one of these islets. The cod and the halibut were providentially provided with large principal islets, and, as these could be quite easily collected by fishermen when cleaning the fish, there would seem to be every hope of a substantial reduction in the cost of production of insulin.

University of Edinburgh: Retirement of Professor Alexis Thomson.

It is a matter of great regret that Prof. Alexis Thomson, C.M.G., has been compelled through ill-health to retire from the Chair of Systematic Surgery, to which he was appointed in 1909. In appreciation of the place he held in the estimation of the undergraduate a former pupil writes in *The Student*, the official students' magazine of the University:—

"Some of us will long remember the strange feeling of despondency we felt on hearing that Prof. Thomson might retire from the Chair of Surgery. He has filled, and will continue to do so, a very conspicuous place in the tradition of the Edinburgh school, and in the conversation and memories of undergraduates. Never has any lecturer occupied a more affectionate and familiar place in the memories of his students. . . . Although severed to his intense regret, from the detail of teaching surgery, his name will long remain as an impulse to progress. One of the greatest benefits students have derived from Prof. Thomson's lectures, and one which he was never tired of emphasising, was his conception of the evolutionary nature of surgery. His teaching was valuable, not for the number of facts that he enunciated, but for the angle from which he regarded surgery, not as an abstract collection of immutable rules, but the practical art of relieving disease based on physiological principles."

Royal Medical Society of Edinburgh.

The inaugural address of the 187th session of the Society was delivered in the Society's Hall, Melbourne-place, on the evening of Oct. 19th by Sir William Leishman, K.C.M.G., Director-General of Medical Services.

Royal College of Physicians of Edinburgh.

At a dinner given by Prof. George M. Robertson in connexion with the Morison lectures, Prof. Robertson spoke on the Centenary of the Delivery of Special Courses of Lectures on Mental Disease.

WEST RIDING ASSOCIATION OF GRADUATES OF THE UNIVERSITY OF EDINBURGH.—The annual dinner will be held in the Great Northern Hotel, Leeds, on Nov. 9th, at 7 P.M. It will be preceded by the annual general meeting at 6.30 P.M. Further information may be obtained from the hon. secretary, 103, Manningham-lane, Bradford.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following table gives some of the principal health statistics for three cities during 1922. It will be noted that Sheffield compares favourably with the other two for the death-rate from respiratory diseases and influenza, probably for the reason given by Dr. Wynne, that influenza was prevalent in the last quarter of 1921 in Sheffield and not in the first quarter of 1922.

City.	Estimated population (R.G.).	Birth-rate.	Death-rates per 1000 of the population.				Death-rates per 1000 births.		
			All causes.	Tuberculosis.	Cancer.	Respiratory with influenza.	Infant mortality		Maternal mort. in childbirth.
							Legit.	Illegit.	
Sheffield	522,600	20·7	11·7	1·2	1·2	2·3	80	119	3·6
York	84,980	20·0	12·3	1·2	1·2	2·5	69	269	6·4
Lincoln	66,930	18·4	12·1	0·9	1·2	3·6	(80)*		4·0

* The figure in brackets gives the undivided infant mortality rate.

Sheffield.

Dr. Fred. E. Wynne reports that the general death-rate and the infant mortality-rate were the lowest ever recorded. The Sheffield death-rate was for the first time lower than that for England and Wales. This is partly due to the fact that the influenza and pneumonia epidemic occurred in Sheffield during the last quarter of 1921, whereas in most parts of the country it occurred in the first quarter of 1922. Eleven cases of small-pox were notified during the year, all of the mild type characteristic of recent outbreaks in the Midlands. All the patients made a good recovery. The war increase in tuberculosis deaths amongst both males and females has disappeared. The lowest death-rate from tuberculosis was in 1920, and the two subsequent years show a slight increase. Thus the deaths in 1920 were 590, in 1921 619, and in 1922 636. Dr. Wynne combats the suggestion that the reduction in infant mortality merely postpones the deaths of infants to a slightly later period of life by showing that the mortality at ages 1–5 has declined pari passu with the mortality during the first year of life. He further shows that, owing to the decreased numbers of deaths of infants from diarrhœal and respiratory diseases, the number of deaths of weakly or degenerate infants with a bad heredity, included in the congenital causes group of prematurity, debility, &c., now form a greater proportion of the total infant deaths. This indicates that the infants who are being saved are not the weekly and degenerate ones.

The number of houses erected during the year was 979, of which 801 formed part of a municipal scheme. Overcrowding is still deplorable and the city treasurer has 4000 families on the waiting list for municipal houses. Owing to the shortage, there has been much sub-letting by tenants of the corporation and endeavours are being made to check this and to prevent undesirable conditions arising on the corporation housing estates. Much attention has been given during the year to the repaving of back-yards, and Dr. Wynne emphasises the fact that "when an unpaved and dirty back-yard is put in good condition the effect is to improve the sanitary condition and cleanliness of the whole interior of the houses using such yard." As the cost falls entirely on the owner, the progress of this work is difficult in many cases at the present time. A scheme is under consideration by which, when necessary, the corporation would do the work and recover the cost from the owner in instalments. Dr. Wynne believes that such an arrangement would constitute, without cost to the rates, an important sanitary reform.

Investigation of the causes of stillbirths does not indicate that syphilis has been a frequent factor. Of 142 cases investigated, 23 were first pregnancies and in 62 cases the mother had previously only had living children. It is suggested that the present unemployment, with its resulting constant worry and malnutrition, has been a factor and that "in many cases there is no apparent cause, which is very suspicious and unsatisfactory." The number of persons dealt with for the first time at the V.D. clinics has declined from 2418 in 1920 to 1399 in 1922. The number of attendances per patient shows a satisfactory increase. The cost of the scheme per person dealt with for the first time was £3 18*s.* 3*d.* in 1920 and £4 16*s.* 1*d.* in 1922. Dr. Wynne sees "no reason why persons who can afford to do so should not pay the whole or some part of the cost of their treatment."

There are 2350 stalls for dairy cows in the city of Sheffield, and in these stalls 23 cows were found during 1922 with tuberculous udders. It has to be borne in mind that the Sheffield cowkeepers know that their cows will be subjected to regular veterinary examination and consequently have a special reason for trying to buy cows free from sign or symptom of tuberculosis. The 1922 experience of one tuberculous udder per 100 stalls is more or less similar to the experience of former years. One may be justified in drawing the inference that the rate of one tuberculous udder per annum per 100 stalls occupied by milk cows would be considerably exceeded in districts where there is no systematic veterinary inspection. An interesting feature of the Sheffield scheme is the use made by the veterinary staff of the microscopical examination for tubercle bacilli. Thus, in 1922, 44 country cows and 18 city cows were found to be suffering from tuberculosis of the udder by microscopical examination of the sample from the suspicious udder. These cows were dealt with at once and the milk-supply freed from infection, without the delay of some weeks necessitated by the biological examination. The number of samples taken from suspected udders during the year was 132. Of these 61 were found to contain tubercle bacilli by immediate microscopical examination and 71 gave a negative result. The 71 "negative" examples were sent for biological examination and nine were returned as positive, 62 as negative. The immediate microscopical test therefore proved of great value.

York.

Dr. Edmund M. Smith tells us that the important events of the year were the opening of the new maternity hospital and the appointment for the first time of an assistant medical officer of health. Acomb Hall has been successfully adapted as a maternity hospital by the city engineer, Mr. F. W. Spurr. The accommodation comprises four large wards with 27 beds, four small wards with nine or ten beds, two one-bed isolation wards with separate conveniences, a labour-room on each of the two floors, a receiving room with bath, and suitable accommodation for administrative purposes. A farm-house on the site provides accommodation for the night nurses and others. The hospital has a very pleasing general appearance and situation, surrounded as it is by ample gardens with fine shrubs and trees. The first resident medical officer is Dr. Kathleen Cass, the newly appointed assistant medical officer of health, and Dr. Louise Fraser has been appointed visiting surgeon on an agreed scale of fees. The Central Midwives' Board have approved of eight pupil-midwives being taken at a time. Maternity and child welfare work in York is carried out by the medical officer of health and his two health visitors, the Infants' Welfare Association, the dispensary, the maternity hospital, the county hospital, the school clinic, and other bodies all working together—an excellent blend of municipal and voluntary effort. Coördination is maintained by the York Child Welfare Council (founded in 1914), which comprises representatives of the various bodies interested and of which Mrs. Edwin Gray is honorary secretary. During the year ended March 31st, 1923, midwives attended about 91 per cent. of the total births in the city and sent for medical help in about 4·4 per cent of their cases. The former figure is surprisingly high and the latter as surprisingly low. Voluntary work is also a feature of the York tuberculosis scheme. The care and after-care committee known as "the Tuberculosis Crusade Committee" raises funds for the provision of financial help, extra food, clothing, beds, bedding, nursing, &c., for those in need of assistance; also for loan of shelters and bath-chairs, payment of expenses at convalescent homes, and assistance towards training for or obtaining more suitable employment. There are 1480 midden-privies in York and over 2700 waste-water closets, but the provision of the latter is now discouraged. During the last 22 years 5556 midden-privies have been replaced by water-closets, either voluntarily or by order under Section 91 or Section 36 of the Public Health Act, 1875. It was proposed during the year to construct a swimming pool in the Rowntree Park, to be fed by river water. The safety of the river water for the purpose was doubted; in any case it would have needed filtration so it was ultimately decided to supply the pool from the water company's mains.

The new houses built during the year numbered 100, 97 being on the Corporation Tang Hall Estate. In December, 1922, the following proposals were adopted as regards priority for letting houses on this estate: (1) The tenant to be in a position to pay the rent; (2) the tenant to be likely to look after the house and keep it in good and clean condition; (3) subject to (1) and (2), preference to given to applicants living in unhealthy conditions; (4) subject to the foregoing, priority to be given to ex-service men and to widows and dependents of ex-service men, and, other things being equal, in order of application. Owing to the housing shortage, there has been undesirable sub-letting on the estate and the corporation have had to interfere. The York City Council have approved a resolution from Chiswick, that the Government be urged to promote legislation, requiring the payment of rates for unoccupied houses held for sale with vacant possession.

Owing to the practice having become prevalent of selling commercial borax, containing considerable quantities of arsenic, for medicinal purpose, a warning letter has been issued to all the vendors in the city.

Lincoln.

Dr. C. J. Coleman makes reference to the progress of various sanitary measures. Following the big scheme of sewerage in 1921, another large scheme for the relief of the High-street sewer has been put in hand. Cesspools to the number of 43 have been abolished and 77 houses, which formerly drained into cesspools, have been connected to the sewer. The danger from contaminated water-supplies still continues in the Foss Ward, where 11 houses have been connected to the city water-mains. The greatest danger is in Doddington-road and an extension of the water-main is needed to give these houses a safe water-supply. Dr. Coleman complains of the nuisance caused by the streets being filled with the heavy unpleasant acrid smoke given off by the increasing number of steam motors used for haulage purposes. So far no active steps have been taken, and the cause is said to be largely due to the use of poor coal. There was one case of mild small-pox in November which necessitated the opening of the small-pox hospital. The question of increasing the efficiency of this hospital is at present under consideration. The number of new houses built last year was 94, 75 under a housing scheme and 19 by private enterprise. There is still a great shortage of houses and consequent overcrowding, and the existing position is a danger to the health of the city. A representation as to certain insanitary areas has proceeded through the usual routine and an inquiry by the Ministry has recently been held thereon.

Correspondence.

"Audi alteram partem."

CENTENARY OF THE LANCET.

To the Editor of THE LANCET.

SIR,—I should like to add a congratulatory message to the many you have received on the Centenary of THE LANCET. I am the proud possessor of the first volume of THE LANCET, which belonged to my great grandfather, and bears on the fly-leaf the bookplate, "Thomas Steele, Surgeon, Reigate, Surrey." At his death it passed with a number of other early volumes of THE LANCET to my grandfather, John Sisson Steele, M.R.C.S., L.S.A., of Reigate. I myself inherited these volumes from my father, Dr. Russell Steele, of Hemel Hempstead. Though, alas, several volumes have disappeared since moving from one house to another, I am still the lucky and proud possessor of Volume No. 1.

I am, Sir, yours faithfully,
RUSSELL V. STEELE, M.B., B.S.

Haverhill, Suffolk, Oct. 19th, 1923.

WARDROP'S OPERATION.

To the Editor of THE LANCET.

SIR,—In the very interesting Centenary Number of THE LANCET it is stated on p. 696 that the name of James Wardrop "may still be familiar from its occurrence in some text-books as the originator of the treatment of aneurysm by distal ligature."

I think that Brasdor was the first to suggest distal ligature of the trunk of the artery affected by the aneurysm. He did not himself perform the operation, nor did it meet with success at the hands of others for many years. Wardrop was the first to perform the operation with success, ligaturing the carotid artery on the distal side of an aneurysm of that trunk. This was in 1825. It was, I think, with the object of giving effect to the two-fold principle of the Hunterian operation that Wardrop subsequently suggested ligature either of the carotid or subclavian artery for the cure of aneurysm of the innominate. He hoped to have a healthy portion of vessel with which to deal and he desired to lessen rather than to arrest the flow of blood through the sac.

I have not looked up the original records, and I am writing from my recollections of the lectures of the late Prof. Pirrie, of Aberdeen, of 43 years ago. He always insisted on defining Brasdor's operation as ligature of the trunk of the artery affected and close to the aneurysm, and Wardrop's operation as ligature of a distal branch.

I am, Sir, yours faithfully,
Leeds, Oct. 16th, 1923. T. WARDROP GRIFFITH.

"DEFATTED" TUBERCLE ANTIGENS.

To the Editor of THE LANCET.

SIR,—Prof. Dreyer's article on "defatted" antigens which appeared in the June number of the *British Journal of Experimental Pathology*, and to which reference had been made in recent issues of your journal, has given me more than usual interest, in that the line of his investigation corresponds somewhat closely to that which I had pursued some years back. With a tubercle antigen freed from fat by repeated treatment with ether and chloroform I had carried out a series of tests on the complement-fixation method for tuberculosis, and published my results[1] in which the technique on the preparation of the fat-free antigen was described. The specific reaction which I had obtained in the test had induced me to try it as a vaccine on tubercle infected guinea-pigs, and, later, with the kind coöperation of Dr. Guy and Dr. Elder, of Edinburgh, on tuberculous patients. The work was, however, interrupted by my departure from that town, and, unfortunately, the number of cases studied was not extensive enough to justify us recording our results. But so far as our investigation went we observed that the infected guinea-pigs which had received the tubercle vaccine survived longer than those which had not, and that the vaccine could be administered to a greater variety of clinical cases of tuberculosis and in much larger doses. The superiority of this lipoid-free antigen over other forms of tubercle antigens is also indicated in the work on the complement-fixation test for tuberculosis independently conducted by Seller and Ramsbottom.[2]

Although much has yet to be done to establish the value of any "defatted" tubercle vaccine as a therapeutic remedy, I believe as I did that a tubercle antigen, when free from lipoids, is more readily emulsified and more favourable to interaction with its antibody, in vivo and in vitro. I am therefore the more glad to see Prof. Dreyer's research on the subject, and await his further results with much interest.—I am, Sir, yours faithfully,

C. Y. WANG, M.D., F.R.C.P. Edin.

University of Hong-Kong, Sept. 15th, 1923.

[1] Brit. Med. Jour., July 5th, 1919.

THE RELATION OF GASTRIC ULCER TO CARCINOMA.

To the Editor of THE LANCET.

SIR,—In connexion with a paper on the above subject that appeared in your issue of Oct. 13th I should like to mention that for over two years a special sub-committee of the Pathological Society of Manchester, with Dr. J. H. Dible, lecturer in pathology at the University, as secretary, has been collecting pathological material bearing on the relation of gastric ulcer and cancer. This collection, in which the specimens dealt with in my paper are included, along with those of several colleagues and some obtained at autopsies, provides a body of material on which it will, I hope, be possible to base a much more comprehensive study of the problem than the cases of an individual surgeon can afford. The existence of this committee and my indebtedness to it, and through it to the department of pathology of the Manchester University, were referred to in my paper as read before the Manchester Surgical Society, but omitted from the copy sent for publication, as being rather of local than general interest. On further consideration, however, I regret this omission, and would ask you to allow me to correct it.

I am, Sir, yours faithfully,
Manchester, Oct. 21st, 1923. JOHN MORLEY.

X RAY DIAGNOSIS OF PREGNANCY: ITS MEDICO-LEGAL ASPECT.

To the Editor of THE LANCET.

SIR,—The annotation in your issue of Oct. 20th, commenting upon the decision of the French law courts in l'affaire d'Evreux, has interested me very much because I have been investigating for over 12 months the value of X rays as an aid in the diagnosis of pregnancy at different stages. By the employment of the correct technique it is my opinion that the fœtal skeleton can be clearly demonstrated upon a skiagram with absolute certainty in any case during or after the sixth month of pregnancy. Earlier than this it is more difficult but not by any means impossible, the difficulty, of course, increasing the earlier the stage of pregnancy. I have recently succeeded in proving pregnancy by the demonstration of the fœtal skeleton on a skiagram in a case which was estimated to be about three and a half months' gestation. An article which I have written on the subject of Radiography of the Fœtus in Utero, with illustrations, is appearing in the October issue of the *Archives of Radiology and Electrology*.

I am of opinion, though, that the judgment for the plaintiff against the French surgeon, who failed to

[2] Jour. Path. and Bacteriol., 1922, xxv., 247.

employ X rays as an aid to diagnosis and who operated for a fibroid tumour and found a viable infant, was not fair, because X rays hitherto have not been employed with any degree of success in pregnancy diagnosis, and judging from the literature upon the subject, which is scanty, the surgeon might have been excused if he was not enthusiastic as to the reliability of radiography.—I am, Sir, yours faithfully,

T. I. CANDY,
Radiologist, Royal Gwent Hospital,
Oct. 20th, 1923. Newport, Mon.

THE PANEL CRISIS AND THE ROYAL COLLEGES.

To the Editor of THE LANCET.

SIR,—A very large number of members of our profession are now embarked upon a great struggle. Up to this point no sound has been heard from either of the Royal Colleges upon the questions at issue. Have we not a right to expect that these bodies, which are responsible for the launching of so many men into the medical profession, and to whom the public generally may look for some guidance in forming its opinion, should come into the open and officially express their views? Their support, given ungrudgingly to their brethren, could not but be a help. Further, although at this moment they are not involved themselves in the struggle, yet who knows how soon panels of "consulting" physicians and surgeons may be formed? Then, even the very presidents themselves will be in a position to say "yea or nay" to work on the panel. I do hope, before it is too late, the Colleges will officially take some part, if only a small one, in the struggle; they have allowed opportunities of service to pass by on other occasions, and there is one here ready to their hand, if only they will grasp it.

I am, Sir, yours faithfully,
LEWIS G. GLOVER.

Hampstead, N.W., Oct. 21st, 1923.

THE LISTER WARD IN GLASGOW INFIRMARY.

To the Editor of THE LANCET.

SIR,—In your issue of Oct. 13th there is an annotation dealing with the proposal to remove the Lister ward which stands in the grounds of the Glasgow Royal Infirmary. I agree with Mr. Morris in thinking that if at all possible that ward should be retained, and nobody could have argued the matter for its retention more fairly and more courteously than Mr. Morris has done. At the same time there is another side to the matter and it is this, that the ground on which the ward stands is urgently required for the purpose of building a new and thoroughly up-to-date dispensary for the outdoor department. Situated as the infirmary is in the midst of a teeming population the outdoor department is an enormous one, and the present premises are wholly inadequate. There is no other situation within the infirmary grounds on which this dispensary can be built.

The Royal Infirmary has been in deep water financially. Fortunately it has pulled through, thanks very largely to the chairman of the board of directors, to the honorary treasurer, and to the acting treasurer, but not very long ago it was quite a possibility that a portion of the infirmary would require to be closed down. The plans for the new dispensary have been drawn, and the chairman has shown them not only to every member of the board of management, but also to every member of the staff, and there has been no suggestion whatever that the plans are unnecessarily large or that the new proposed accommodation is not required. There is only one possibility of retaining that ward, and it is that ground be purchased in the immediate neighbourhood of the infirmary and cleared and utilised for the building of the new dispensary. The managers have the greatest difficulty in financing the hospital. Hitherto they have been successful, but they certainly have no money to use for the purchase of additional ground for the erection of these new buildings. I think in all fairness it is up to those who disapprove of the managers' proposed action to provide the funds for the purchase and the clearing of a site in the immediate neighbourhood of the hospital. I am not sure that the dispensary can be built away from the hospital or outside of the grounds, but I am going on the supposition that the thing is possible. Various people of note have visited the hospital. I am sorry to say without giving the chairman or any of his colleagues intimation of their proposed visit, and therefore making it impossible for any of the managers to meet them, and after such visits have communicated their adverse opinion of the managers' conduct to the press. I do not know the dictates of modern courtesy at all, for I am old-fashioned, but it is an extraordinary thing that these distinguished gentlemen should have visited the Royal Infirmary without ever signifying to the directors their intention of doing so. It would have afforded the managers of the Royal Infirmary the greatest pleasure to have met some of these gentlemen and to have discussed the matter in an amicable way.

I am, Sir, yours faithfully,
ANDREW FREELAND FERGUS,
Glasgow, Oct. 18th, 1923. One of the Managers.

THE UNITED HOSPITALS WINTER SPORTS CLUB.

To the Editor of THE LANCET.

SIR,—I trust that you will assist me to bring to the notice of your readers this club which was founded to encourage winter sports amongst past and present students of all recognised medical schools in the United Kingdom. As the Grand Hotel, Griesalp, Bernese Oberland, was considered a success last season, it has been decided to make this the Club Hotel for 1923–24. Our President, Lord Dawson, has very kindly consented to give a trophy for a ski-race to be held at Griesalp between Jan. 6th and Jan. 13th. All particulars can be obtained from the manager of the above hotel.

I am, Sir, yours faithfully,
J. DUNCAN LYLE,
Oldfield Lodge, Maidenhead, Oct. 22nd, 1923. Hon. Sec.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Lt.-Comdrs. P. G. Richards (D.) to *Excellent*; T. W. Carruthers to *Cleopatra* (on recommg.); and J. B. Crawford to *Victory*, for R.N. Hospl., Haslar.

Surg. Lt. W. Young to *Iron Duke* (on recommg.).

ROYAL ARMY MEDICAL CORPS.

Lt.-Col. (temp. Col.) J. C. Kennedy is appointed Hon. Physician to the King, and is granted the brevet rank of Col.; and Maj.-Gen. D. J. Collins, late R.A.M.C., is appointed Hon. Surgeon to the King, vice Lt.-Gen. Sir C. H. Burtchaell, late R.A.M.C. (ret.).

Capt. J. P. Litt retires, receiving a gratuity, and is granted the rank of Maj.

Capt. H. J. Bensted relinquishes the temp. rank of Maj.

The undermentioned relinquish the acting rank of Maj.: Capt. B. L. Davis and Temp. Capt. J. D. Gunn.

Capt. A. W. Dennis retires, receiving a gratuity, and is granted the rank of Maj.

ARMY DENTAL CORPS.

Capt. G. W. Allen resigns his commn.

SPECIAL RESERVE OF OFFICERS.

Supplementary to Regular Units or Corps: Capt. J. F. W. Sandison relinquishes the acting rank of Lt.-Col.

TERRITORIAL ARMY.

Lt. G. F. Shepherd to be Capt.

ROYAL AIR FORCE.

Squadron Leader R. J. Aherne is granted a permanent commn.

Obituary.

HARRY MICHIE, M.B., C.M. ABERD.,

HON. SURGEON TO THE SAMARITAN HOSPITAL FOR WOMEN, NOTTINGHAM.

Dr. Harry Michie, who was a well-known Nottingham surgeon, died suddenly from cardiac syncope while out shooting at Flintham on Oct. 13th. A native of Forfarshire, he was born at Edgell in 1855, and, after a successful career at Aberdeen University, graduated M.B., C.M. in 1881. For a few months he practised as an assistant to Dr. Owen Taylor at Nottingham, then returned to Scotland, and, subsequently, in 1884, started a practice again at Nottingham, where he soon gained for himself a wide reputation, which was added to by some good literary contributions. He had been honorary surgeon to the Samaritan Hospital for Women, Raleigh-street, for some 37 years, and was a past-president of the Nottingham Medico-Chirurgical Society. He leaves a widow and two sons.

Dr. P. Kinmont writes as follows of his friend and colleague :—

"With tragic suddenness Dr. Michie died in the shooting field while engaged in the enjoyment of his favourite recreation. He had left home apparently in his usual health and in the best of spirits. Suddenly, about mid-day, without suffering, without scarcely any knowledge of what was happening, he passed over to the Great Beyond. Those of us who were privileged to know Dr. Michie intimately, feel he would have preferred no other end. To me his loss is irreparable—gone is my trusty, staunch and loyal friend of the last 15 years. Countless numbers of his patients will recall with gratitude and affection their genial adviser and helper. No matter how humble the sphere of life Dr. Michie was ever ready and willing to lend his skill to alleviate suffering without thought of worldly gain. His ability and skill in his special sphere were beyond dispute and estimation. Dr. Michie's very presence in the sick room or operating theatre with those kindly twinkling eyes, that quiet voice and genial manner, was at once an inspiration to courage and confidence. In his hands we felt safe, we loved and trusted him, and he did not fail us. We cannot easily replace such a tower of strength and faithful counsellor in times of trouble."

THE LATE SIR WILLIAM RICE EDWARDS.

Sir Patrick Hehir writes to add the following appreciation of the late Major-General Sir William Rice Edwards whose obituary notice recently appeared in THE LANCET :—

"He was a personal friend of mine for over 40 years. We qualified together, were at Netley together, and on several occasions worked together in India; our aims were similar, he on the civil, and I on the military side of the I.M.S. In 1913 he did his military training with me for promotion to A.D.M.S., and, although civil employment was more congenial to him, he went through this course most diligently, and did excellent work afterwards as an A.D.M.S. on the North-West Frontier. Edwards had wide and varied professional experience, was an ideal executive officer, and a sound and popular physician, and as Director-General of the Indian Medical Service proved himself to be one of the best administrative medical officers that Service ever had. His devotion to the I.M.S. was unalloyed by anything in the shape of personal ambitions. In his advocacy of the interests of the I.M.S. he was quite fearless; indeed, his persistence and his firmness made him sometimes unpopular in high quarters, but only for a time. A few months after becoming Director-General, he, in the Legislative Council, boldly declared his policy as regards the I.M.S., the improvements he considered necessary to carry out in it, and the way in which these improvements should be introduced. That was the occasion on which he said that the conditions of the I.M.S. had become intolerable. Many of the suggestions he then made have since been given effect to. It was largely due to Sir William Rice Edwards that the I.M.S. owes the concession that its Director-General may now see the Viceroy personally on technical matters, a privilege which has likewise been extended to all Inspectors-General of Civil Hospitals, and has been of the greatest use to the medical services in India. Sir William Rice Edwards was a reliable friend and an excellent companion."

Medical News.

UNIVERSITY OF CAMBRIDGE.—At examinations held recently the following candidates were successful :—

DIPLOMA IN PUBLIC HEALTH.

Lachhman Singh Ahluwalia, Gilbert A. Back, William Bird, John McPhail Campbell, Jhangi Ram Chaudhri and Herbert L. Cronk (distinguished in the Application of Sanitary Science), Robert Cunningham, Mary A. Grant, Alice J. Gray, Susan M. S. Jamieson, Henry D. Kelf, John McWilliam McDonald, Wazir Chand Mathur, Archibald C. Munro (distinguished in the Principles of Hygiene, in Bacteriology, and in the Application of Sanitary Science), Cuthbert E. R. Norman, Alexander C. Paterson, Rajapuram Nellaveran Raja, Abdel Magid Ramzy, Gladys H. Randall (distinguished in the Principles of Hygiene), Abd El-Hamid Sadek, Manuel J. Saldanha, Ardeshir Merwanji Seerval, Florence G. Sherry, Isobel M. Smith, Katherine C. Spence, Bertram Suggit, Nora I. Wattie, Robert Weaver, Alan D. Whitelaw, and Catherine B. Wilson.

DIPLOMA IN HYGIENE.

Ahmed Mohamed Kamal (distinguished in the Application of Sanitary Science) and Mohamed El Sebaiy.

UNIVERSITY OF OXFORD: *Hospital Scholarships.*—The following members of the Medical School have been elected to scholarships at the undermentioned hospitals :—Guy's Hospital: War Memorial Scholarships, £80, D. Lurie, Lincoln College; University Students Open Scholarship, £80, W. D. B. Read, Magdalen College. London Hospital: Second University Scholarship, V. H. Brink, Hertford College. King's College Hospital: Burney Yeo Scholarships, J. W. de W. G. Thornton, Magdalen College, and J. A. Eyres, Lincoln College. St. Mary's Hospital: University Scholarships, £200, R. B. Bourdillon, University College, and P .C. Mallam, Queen's College. St. George's Hospital: University Scholarship. H. A. Byworth, Oriel College. Westminster Hospital: University Scholarship, £80, S. Segal, Jesus College.

UNIVERSITY OF LONDON.—A course of four lectures on the Treatment of Injuries of the Long Bones produced by Accident or Disease, will be given at Guy's Hospital Medical School by Prof. E. W. Hey Groves, at 5.30 P.M., on Nov. 8th, 9th, 12th, and 13th. At the first lecture the chair will be taken by Mr. H. J. Waring.

A Gift for Otology.—The University of London have accepted a gift of £10,000 from Mr. Geoffrey E. Duveen to found a chair of otology, and the donor intends to allocate a further £15,000 to University College Hospital for the provision of modern treatment of the deaf. The double gift is made in memory of the donor's father, Mr. Henry J. Duveen, one of the founders of the art firm of Duveen Bros., of London, Paris, and New York. Mr. Duveen the elder brought together some of the most famous art collections in America and the French honoured his reputation by appointing him Chevalier of the Legion of Honour.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—A quarterly Council meeting was held on Oct. 18th, with Sir John Bland-Sutton in the chair. A vote of thanks was passed to Mrs. Elliott, widow of Dr. John Elliott, of Chester, for presenting a number of skulls and skeletons from the cemetery of the Roman Occupation period exposed during the extension of the Chester Infirmary, and to Prof. Derry, of Cairo, for presenting a number of interesting and valuable specimens brought over by him from Egypt.—On behalf of the Committee on the Annual Report of the Council a draft copy of the report to be presented to the Fellows and Members at the annual meeting on Nov. 15th was submitted, and the report was approved and adopted.—Mr. Herbert Tilley and Mr. Arthur H. Cheatle were elected examiners for Part I. of the examination for the Diploma in Laryngology and Otology. Mr. H. James Marriage was elected examiner for Part II. of the examination for the same diploma.—The President reported that the Sir Gilbert Blane medal had been awarded to Surg.-Lieut.-Comdr. Julian Lionel Priston, M.B., R.N.—The President reported the receipt of a portrait by Troubtzkoy of the late Sir William MacCormac, President of the College from 1896 to 1900, bequeathed to the College by Lady MacCormac.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.—At the meeting of the College held on Oct. 17th Sir Harold J. Stiles, LL.D., was elected President for the ensuing year, Sir David Wallace, C.M.G., Vice-President, and Mr. Alexander Miles, F.R.C.S.E., Secretary and Treasurer.

Fellowship Examination.—The following candidates, who passed the requisite examinations between July 9th and 13th, were admitted Fellows :—

Sankaranainarkoil Chidambaranatha Alagappan, Walter M. Ash, Frederick W. W. Baillie, Edgar B. Barnes, Harold C. Brayshaw, Reginald C. Clifford, Bernard T. Cullen, Manikkam Durairaj David, Alexander Galletly, Leslie J. Middleton, Douglas A. Mitchell, Norman A. M. Petersen, and Herbert B. Scott.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH, ROYAL COLLEGE OF SURGEONS OF EDINBURGH, AND ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At examinations recently held the following candidates were successful:—

THIRD EXAMINATION.

David Lumsden, George McCracken, Ernest G. Douglas, Cassaly Ismail, Philip Henry, Byerley C. F. Leembruggen, Lewis Mackenzie, William W. Crawford, Jessie R. Bruce, Kristian Skulberg, Arthur A. F. Shepherd, and John B. Hutchison.

Pathology.—Guthrie Russell, John A. Mains, Elizabeth C. Mudie, and Joseph W. McVicker.

Materia Medica.—John L. Dearberg, Robert J. Snodgrass, Alistair G. Cruikshank, Arthur G. Farquharson, Henry B. Martin, Thomas D. Gould, William Jackson, William Allan, and William E. Williams.

FINAL EXAMINATION.

Joseph W. Ridley, James Ryan, Dunstan D. S. Outschoorn, James S. Allan, Soo Hock Tan, Arthur H. Stephenson, Samuel L. Navaratnam, Robert G. Melrose, Joseph R. Whitaker, Carl F. Birkenstock, Alexander B. Williamson, Don Swithin Merl Emmanuel Perera, Phyllis M. Walker, Alexander Ross, Charles M. Hinds, Andrew Bury, Charles L. S. Ferdinands, Alexander L. Tinto, Alexander Gillies, Hieronymus Hoffmann, George A. P. McConey, William R. Robertson, John G. Thomas, Ronald M. MacKinnon, and Herbert E. Schokman.

Medicine.—Richard F. Kerr, Akinlawon Adefolu, Velayatham Pillai Thiyagaraja, Arthur W. H. Noble, Pattel Shankerlal Hathibhai Masters, James Kirkness, and Jitendra Nath Dey.

Surgery.—Arnold Raff and Vethavanam Vaithialingham.

Midwifery.—Arnold Raff, Annie H. Sutherland, Akinlawon Adefolu, Velayatham Pillai Thiyagaraja, George C. Philips, Vethavanam Vaithialingham, Sinnatamby Thambipillai, Clement A. Barrow, Joseph McAuley, Wilhelmina C. Storrie, Elizabeth Clark, and William Melrose.

Medical Jurisprudence.—William T. Baker, Tom G. S. Harkness, Joseph B. Stromier, Irma E. L. Mackenzie, James Houston, James K. Hunter, Mohammed Mustafa El-Makkawi, James H. MacAlpine, John Harkness, Nashid Tadros Yusif, Donald L. Crawford, Bruce F. Home, and Henry A. Newton.

The following candidates having passed the requisite examinations have been admitted Diplomates in Public Health:—

William S. Macdonald, Elizabeth N. Thompson, Alexander R. Lester, James F. Seale, William Campbell, Harvey Nichol, Robert G. Shaw, Dorothea I. Baird, Peter Hutchison, Katharine J. Guthrie, James S. McLean Gray, James L. Halliday, Margaret A. Galbraith, William McKie, Peggy L. Mitchell, John G. Gill, Kenneth A. Macrae, Frank D. M. Beaton, Katrine Dunn, David T. Richardson, Catherine Hill, Helen Campbell, George W. Murray, Charles M. Smith, and Robert Wiggins.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.—At the annual stated meeting of the President and Fellows of the College, held on Oct. 18th, the following officers were elected for the coming year:—

President: Dr. Michael F. Cox. Vice-President: Sir William J. Thompson. Censors: Sir W. J. Thompson, Dr. W. J. Dargan, Dr. J. Speares, Dr. R. E. Tottenham. Additional Examiners to take the place of an absent Censor or Examiner: Medicine, Dr. G. Nesbitt; Midwifery, Dr. J. S. Sheill; Medical Jurisprudence and Hygiene, Dr. S. T. Gordon. Examiners for the Licence to practise Midwifery: Dr. Gibbon FitzGibbon and Dr. MacLaverty. Supplemental Examiners under the Conjoint Scheme: Biology, Dr. G. Nesbitt; Chemistry, Dr. H. C. Earl; Physics, Dr. W. A. Winter; Pharmacy, Materia Medica, and Therapeutics, Dr. F. X. Callaghan; Physiology, Dr. Harold Pringle; Anatomy, Dr. H. C. Earl; Pathology, Dr. J. T. Wigham; Medicine, Dr. F. C. Purser. Examiners for the Conjoint Diploma in Public Health: Hygiene, Dr. H. Bewley; Bacteriology, Dr. H. C. Earl; Sanitary Law and Vital Statistics, Sir W. J. Thompson; Meteorology, Sir John Moore. Examiners for the Conjoint Preliminary Examination: Languages, Mr. E. H. Alton, F.T.C.D.; Irish, Mr. E. J. Gwynn, F.T.C.D. Examiners for the Membership: Practice of Medicine, Dr. A. R. Parsons and Dr. J. Speares; Clinical Medicine, Dr. W. J. Dargan and Dr. J. A. Matson; Pathology, &c., Dr. H. C. Earl and Dr. A. C. O'Sullivan; Obstetrics and Gynæcology, Dr. T. H. Wilson and Dr. Bethel Solomons. Representative on the General Medical Council: Sir John Moore. Representatives on the Committee of Management: Dr. Walter Smith, Sir John Moore, and Dr. T. Percy C. Kirkpatrick. Treasurer: Dr. Henry Bewley. Registrar: Dr. T. Percy C. Kirkpatrick. Librarian: Mr. R. Phelps. Law Agent: Messrs. Stephen Gordon, Son, and Wilson. Agents to the Trust Estate of Sir Patrick Dun: Messrs. Townshend.

EDINBURGH UNIVERSITY CLUB OF LONDON.—The 200th dinner of the Club will be held at the Connaught Rooms, London, at 7.30 P.M., on Friday, Nov. 23rd. The chair will be taken by the Earl of Balfour, the president of the Club, and there will be a large gathering of members and their guests. The Club now numbers 600 members.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—The programme of special courses arranged for November covers a wide range of subjects, beginning with a fortnight's course in general medicine and surgery at the Royal Northern Hospital in conjunction with the Central London Ophthalmic Hospital, North-Eastern Fever Hospital, and the Royal Chest Hospital. Clinical demonstrations in the various departments will be given each day from 10.30 A.M., concluding with a lecture at 4.30 P.M. Also, beginning on Nov. 5th and continuing throughout the month, there will be a course in Gynæcology at the Chelsea Hospital for Women. Lectures will be given by members of the staff each day, preceded by demonstrations in the out-patient department or operations in the theatre. A month's course in psychological medicine has been arranged at the Maudsley Hospital, Denmark Hill, and will consist of lectures and demonstrations on the psychoneuroses, the practical aspect of mental deficiency, the pathology of mental diseases, clinical psychiatry, and crime and insanity. Also, at the London Lock Hospital (Dean-street and Harrow-road), a comprehensive course of lectures and clinical demonstrations on venereal diseases will be given from Nov. 5th to 29th. A lecture on some aspect of the subject will be given each day supplemented by clinical work in the wards and out-patient department. From Nov. 19th to Dec. 15th a practical course in ophthalmology will be given at the Royal Westminster Hospital. In addition to clinical instruction every afternoon from 2 P.M., a practical fundus class and special demonstrations in medical ophthalmology and methods of examination will be given three times a week at 10 A.M. Beginning on Monday next, Oct. 29th, a two weeks' course in dermatology will be given at the Hospital for Diseases of the Skin, Blackfriars, consisting of clinical instructions every afternoon from 2.30 with special demonstrations on selected cases. Further particulars and copies of the syllabus of any of the above courses will be forwarded on application to the Secretary to the Fellowship of Medicine, at 1, Wimpole-street, W.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—The Bradshaw lecture will be delivered on Nov. 1st, at 5 P.M., by Dr. John Hay, the subject being Angina Pectoris: Some Points in Prognosis. Dr. C. J. Singer will give the FitzPatrick lecture on the History of Anatomy on Nov. 6th and 8th.

THE President of the Dermatological Section of the Royal Society of Medicine and Mrs. Graham Little held an evening reception on Oct. 16th to meet Dr. John Addison Fordyce, Professor of Dermatology, Columbia University, and Bellevue Hospital Medical College, New York. Many distinguished guests were present. On Oct. 18th Dr. Fordyce read a paper on the Treatment of Neuro-syphilis before the Dermatological Section, which we publish on p. 932 of our present issue.

IN reviewing last week a series of five admirable but unrelated "Surgical Monographs" we protested strongly against the arbitrary action of the publisher in refusing to supply any one of the monographs separately. We now learn that at a meeting of the Library Committee of the Royal Society of Medicine it was resolved that the purchase of the monographs would be considered only when the publishers had withdrawn this restriction.

NORTH-WESTERN TUBERCULOSIS SOCIETY.—Dr. Leonard Hill, F.R.S., will deliver a lantern lecture, entitled Climate and the Treatment of Consumption, at the Tuberculosis Department, Joddrell-street, off Hardman-street, Deansgate, Manchester, on Thursday, Nov. 1st, at 3 P.M. Medical practitioners interested in this subject are invited to attend.

LONDON HOSPITAL MEDICAL COLLEGE.—The following awards have been made: "Price" University Scholarship in Human Anatomy and Physiology: H. L. Green, Sidney Sussex College, Cambridge; proxime accessit, V. H. Brink, Hertford College, Oxford (awarded a second scholarship).

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—The annual dinner was held on Oct. 19th at the Hotel Cecil, London, Dr. T. W. Naylor Barlow, O.B.E., the president of the Society, occupying the chair. A large and representative company was present, the guests including Sir William Joynson-Hicks, the Minister of Health, Sir George Newman and Sir Arthur Robinson, of the Ministry of Health, Mr. Justice Swift, Sir Humphry Rolleston, Lord Riddell, Sir Dawson Williams, Dr. Alfred Cox, and Sir Squire Sprigge. The "Prosperity of the Society" was proposed by the Minister of Health, who said that his new official position would bring him into intimate contact with the Society, and that he was quite sure that all their members would join with him in a campaign which he looked forward to fighting during the next few years, if he was spared to remain in office, for the better distribution of the surplus urban populations in the country districts. He would like, he said, with the coöperation of local authorities, to drive great arteries through overcrowded districts into unoccupied regions,

forming giant thoroughfares across country districts, when the people, now crowded in slumdom, would follow the new routes into health and healthy occupation. Dr. Barlow, whose reply was a happy admixture of the serious and the humorous, said that he claimed for the medical officers of health the position of being the outposts of the Ministry of Health, and he assured the Minister that the Society would place at his disposal all the knowledge and experience which they had acquired and were acquiring. The toast of "The Guests" was proposed by Colonel F. E. Fremantle, M.P., and was responded to by Lord Riddell and Sir Squire Sprigge. "The Health of the Chairman" being happily dealt with by Sir Benjamin Johnson, High Sheriff of Lancashire. The proceedings during the evening were interspersed by songs from Miss Victoria Barton and Mr. John Saville, accompanied at the piano by Miss Iris Tregoning. Mr. Tom Clare also entertained at the piano.

BRITISH DENTISTS' HOSPITAL.—The annual general meeting will be held to-day, Saturday, Oct. 27th, at 3.30 P.M., with Sir Harry Baldwin, the president, in the chair.

SMALL-POX IN ENGLAND AND WALES.—During the week ended Oct. 13th, 33 new cases of small-pox were brought to the notice of the following sanitary authorities: Berks 3 (Wokingham); Derbyshire 1 (Chesterfield); Gloucestershire 20 (Gloucester 16, "including one case notified as chicken-pox but rediagnosed as small-pox," East Dean R.D. 3, Gloucester R.D. 1); Northumberland 1 (Tynemouth); Notts 5 (Kirkby-in-Ashfield 4, Mansfield 1) Yorks North Riding 2 (Middlesbrough 1, Flaxton R.D. 1); Yorks West Riding 1 (Adwick-le-Street).

INSTITUTE OF HYGIENE.—A lecture will be delivered on Oct. 30th by Dr. W. G. Savage on the Balance of Diet, at 3.30 P.M. On Nov. 6th Dr. James Fenton will speak on Preservatives and Adulterants in Foods; and on Nov. 13th Dr. A. Middleton Hewat will discuss Pure Food Supplies. On Nov. 20th Sir Kenneth Goadby will speak on Diet and Disease; and on Nov. 27th Mr. Joseph E. Adams will give an address on Habits, Diet and Malignant Disease. These lectures are part of a series on Food and Diet, which are being delivered under the auspices of the Institute of Hygiene, 33–34, Devonshire-street, London, W. 1, at 3.30 P.M. on Tuesdays.

CHADWICK PUBLIC LECTURES. — The following lectures will take place during October, November, and December, 1923. On Oct. 29th, at 5.15 P.M., at the house of the Medical Society of London, Chandos-street, Cavendish-square, with Sir Malcolm Morris presiding, Dr. C. Killick Millard will lecture on the Disposal of the Dead. On Nov. 9th, 16th, and 23rd, at 8 P.M., at the house of the Royal Society of Arts, John-street, Adelphi, Major Harry Barnes will give three lectures on Hygiene and Architecture. At the first lecture on Health and Town-planning, Mr. W. E. Riley will preside. At the second on Health and the Building, Mr. J. Slater will preside, and at the third, on Health and the Hospital, Sir William J. Collins will preside. On Dec. 3rd, at 8 P.M., at the Goldsmiths' College Lecture Hall, New Cross, Dr. A. K. Chalmers will lecture on Housing Standards—How they can be Raised, Sir William J. Collins again presiding, and on Dec. 5th, at 5.30 P.M., Dr. Chalmers will lecture on the same subject at Kensington Town Hall, with Sir James Crichton-Browne in the chair. Two lectures will be given in November at Bristol University, the Vice-Chancellor presiding. On Nov. 22nd and 29th, at 5.30 P.M., Dr. W. M. Willoughby will lecture on the Theory and Reasonable Practice in the Disinfection and Disinfecting of Ships. The first lecture will be devoted to Disinfection in Diseases due to Bacteria, and the Ultra-microscopic Viruses, and the second to Disinfection and Disinfecting in Insect and Rat-borne Diseases. Admission is free to all these lectures. Further particulars may be obtained from the Secretary, at the offices of the Chadwick Trust, 13, Great George-street, Westminster, London, S.W. 1.

MANCHESTER LOCAL VOLUNTARY HOSPITALS COMMITTEE.—This Committee has issued a special report dealing with the 17 local hospitals and their maintenance on the voluntary system, and also on their local work and funds. The Committee representative was appointed in 1921, and has on it representatives nominated by the Voluntary Hospitals Commission, the City Council, the hospitals, and two medical representatives. Amongst the other good offices of the Committee it advised the Voluntary Hospital Commission as to the distribution of £17,485 to hospitals in the local area, and was instrumental in arranging a scheme for raising money from employers and employees for the Convalescent Homes Fund. The statistics show that for 1922 the total ordinary income of the 17 hospitals was £231,852 and the expenditure £281,276, thus giving a deficit for the year of £49,424. Of the total income only 16 per cent., or £36,969, was subscribed by patients; £38,997 was received from local authorities and approved societies in respect of patients or for the use of beds; £51,476 was derived as income from invested property, and the balance, £104,400, was met from various voluntary sources. For maintenance the ordinary expenditure was £281,276, leaving a deficit for the year of £49,424. These figures do not include extraordinary income—legacies, grants from Voluntary Hospitals Commission—but if these be added to ordinary income, there still remained a deficit for the year of £15,847. The Committee recommend that free legacies should be invested in order to help provide a regular source of income, but many hospitals, owing to their urgent financial needs, have been unable to follow this advice, and such legacies had to be employed for current expenditure. The statistics as to attendance show that the Manchester and Salford Hospitals, besides providing for the local needs of the city and borough, are largely made use of by patients from the adjoining towns and from areas much further afield —e.g., from Yorkshire, Cumberland, Westmorland, Derbyshire, Cheshire, and Wales. The estimated cost of in-patients was £224,398, and the average cost of bed occupied was £121 3*s.* 9*d.* and of each in-patient £8 3*s.* 6*d.*; the average payment by each patient was 15*s.* 11*d.*, and the amount to be provided for each in-patient from voluntary sources was £7 7*s.* 7*d.* and the amount provided from voluntary sources for each out-patient 5*s.* 9*d.*

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear it if reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY, Burlington House, W.
THURSDAY, Nov. 1st.—4.30 P.M.
Papers to be read: E. G. T. Liddell and Sir Charles Sherrington, P.R.S.: A Comparison between Certain Features of the Spinal Flexor Reflex and of the Decerebrate Extensor Reflex respectively. J. Barcroft and H. Barcroft: The Blood Pigment of Arenicola. T. Deighton: The Basal Metabolism of a Growing Pig. (Communicated by Prof. T. B. Wood.)

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Tuesday, Oct. 30th.

Social Evening.

The first Social Evening of the Session will be held on Tuesday, Oct. 30th, at 8.30 P.M.
Fellows, Members of Sections, Associates and their friends will be received by the President, Sir William Hale-White, and Lady Hale-White, at 8.30 P.M.
The Society's Gold Medal will be presented to Prof. Gowland Hopkins, F.R.S., Professor of Biochemistry, University of Cambridge, who will give, at 9 P.M., a short Address entitled "Stimulants of Growth."

LIBRARY:
On this evening the principal Reading Room will be closed at 5 P.M., but readers will be accommodated in other rooms.

Thursday, Nov. 1st.

OBSTETRICS AND GYNÆCOLOGY: at 8 P.M.
Specimens:
Mr. A. C. Palmer: (1) Strangulated Uterine Hernia of Small Intestine. (2) Congenital Cavernous Hæmangioma of Liver.
Short Communication:
Dr. Alfred B. Danby: Three cases of Pregnancy with Extravasation of Blood in Association with Albuminuria.
Paper:
Dr. Moreland McCrea and Mr. Victor Bonney: The Relation between Certain Disorders of the Female Pelvic Organs and Symptoms ordinarily considered the Province of the Physician.

UNIVERSITY OF LONDON SEMON LECTURE, in the Barnes Hall, at 5 P.M.
Dr. A. Logan Turner: The Advancement of Laryngology: a Plea for Adequate Training and Closer Cooperative Action.

Friday, Nov. 2nd.

LARYNGOLOGY: at 4.45 P.M. (Cases at 4 P.M.)
Cases and Specimens will be shown by Sir James Dundas-Grant, Mr. A. J. Hutchison, Dr. Macleod, Mr. J. F. O'Malley, Mr. J. S. Fraser, and others.

ANÆSTHETICS: at 8.30 P.M.
Paper:
Dr. Henry Featherstone: A Critical Report on 100 Cases of Spinal Analgesia with Tropacocaine.

Saturday, Nov. 3rd.

OTOLOGY: at 10 A.M.
Demonstration:
Mr. J. S. Fraser: Demonstration of Lantern Slides showing Changes in Inner Ear in a Congenitally Deaf Dog.

Cases:
Sir James Dundas-Grant will show a case illustrating Digital Compression of Vertebral Arteries for Pulsating Tinnitus.
Cases will also be shown by Mr. T. B. Layton, Dr. A. R. Friel, and others.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.
MONDAY, Oct. 29th.—10 A.M., Mr. Maingot: Surgical Pathology. 12 noon, Mr. Simmonds: Applied Anatomy. 3 P.M., Mr. Simson: Diseases of Women.
TUESDAY.—10.30 A.M., Dr. Paterson: Medical Wards. 12 noon, Dr. Burrell: Chest Cases. 2.30 P.M., Mr. Tyrrell Gray: Surgical Wards.
WEDNESDAY.—10 A.M., Dr. Saunders: Medical Diseases of Children. 12.15 P.M., Dr. Burnford: Medical Pathology. 3 P.M., Dr. Pernet: Skin Dept.
THURSDAY, Nov. 1st.—10 A.M., Dr. Grainger Stewart: Neurological Dept. 12 noon, Mr. Simmonds: Demonstration of Fractures. 2 P.M., Mr. MacDonald: Genito-Urinary Dept.
FRIDAY.—10 A.M., Dr. Drummond Robinson: Gynæcological Operations. 2 P.M., Mr. Banks-Davis: Nose, Throat, and Ear Dept. 2 P.M., Mr. Sinclair: Surgical Out-patients.
SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy. 10 A.M., Dr. Saunders: Medical Diseases of Children. 10 A.M., Mr. Banks-Davis: Operations on Throat, Nose, and Ear.
Daily, 10 A.M. to 6 P.M., Saturdays, 10 A.M. to 1 P.M., In-patients, Out-patients, Operations, Special Departments.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C. 1.
POST-GRADUATE COURSE: OCTOBER–NOVEMBER, 1923.
CLINICAL LECTURES AND DEMONSTRATIONS.
MONDAY, Oct. 29th.—2 P.M., Out-patient Clinic: Dr. Hinds Howell. 3.30 P.M., Disorders of Intellectual Expression: Dr. Kinnier Wilson.
TUESDAY, Oct. 30th.—2 P.M., Out-patient Clinic: Dr. Grainger Stewart. 3.30 P.M., Muscular Atrophies: Dr. Adie.
THURSDAY, Nov. 1st.—2 P.M., Out-patient Clinic: Dr. Kinnier Wilson. 3.30 P.M., Cerebral Tumours: Dr. Gordon Holmes.
FRIDAY, Nov. 2nd.—2 P.M., Out-patient Clinic: Dr. Gordon Holmes. 3.30 P.M., Cerebral Abscess: Mr. Sydney Scott.
COURSE OF LECTURES AND DEMONSTRATIONS ON NEURO-PATHOLOGY.
MONDAY, Oct. 29th.—12 noon, Paths of Infection of Central Nervous System: Dr. J. Godwin Greenfield.
A COURSE of LECTURES on the ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM commenced on Oct. 16th.
Mr. Armour and Mr. Sargent operate at the Hospital on Tuesday and Friday mornings at 9 A.M., or at such other times as may be announced.
The fee for the Course, including Pathology, is £5 5s. The fee for the Anatomy and Physiology Lectures is £3 3s. If taken in conjunction with the Clinical and Pathological Courses, an inclusive fee of £7 7s. will be charged. Any part of the Course may be taken separately. Special arrangements will be made for those unable to take the whole Course. Fees should be paid to the Secretary of the Hospital at the office on entering for the Course.
C. M. HINDS HOWELL, Dean of Medical School.

ST. JOHN'S HOSPITAL, Leicester-square, W.C.
TUESDAY, Oct. 30th.—5 P.M., Dr. S. E. Dore: Alopecia.
THURSDAY, Nov. 1st.—5 P.M., Dr. J. M. H. MacLeod: Elementary Pathology of the Skin.

HOSPITAL FOR SICK CHILDREN, Gt. Ormond-st., W.C.
THURSDAY, Nov. 1st.—4 P.M., Dr. Thursfield: Rickets.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, W.
WEDNESDAY, Oct. 31st.—4 P.M., Major H. G. Anderson: Air Accidents.

LIVERPOOL UNIVERSITY CLINICAL SCHOOL.
(At 3.30 P.M. each day.)
MONDAY, Oct 29th.—(At the Children's Hospital.) Mr. McMurray: Hip Conditions in the Child.
TUESDAY.—(At the Southern Hospital.) Mr. Newbolt: Operations on the Elderly.
WEDNESDAY.—(At the Northern Hospital.) Mr. McMurray: Derangements of the Knee-Joints.
THURSDAY, Nov. 1st.—(At the Stanley Hospital.) Dr. Wadsworth: The Significance of the Heart Sounds.
FRIDAY.—(At the Royal Infirmary.) Mr. Litler Jones: Surgical Cases.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE CLINIC.
TUESDAY, Oct. 30th.—4.15 P.M., Mr. W. H. Hay: Tumours and Ulcers of the Mouth.
FRIDAY, Nov. 2nd.—4.15 P.M., Dr. T. H. Oliver: Physiology and Pathology of Diabetes Mellitus.

SALFORD ROYAL HOSPITAL.
(Special Course on Surgical Tuberculosis.)
THURSDAY, Nov. 1st.—4.30 P.M., Mr. G. Jefferson: Tuberculosis of the Lymphatic Glands.

UNIVERSITY OF BRISTOL POST-GRADUATE DEMONSTRATIONS.
WEDNESDAY, Oct. 31st.—(At Swindon), Prof. F. H. Edgeworth: *Bacillus Coli* Infections of the Urinary Tract.

Appointments.

Paddington Green Children's Hospital: LEYS, D., M.B., B.Ch. Oxf., House Physician; HYSLOP, W. M., M.B., Ch.B. Edin., House Surgeon.
Royal Infirmary, Edinburgh: OSBORNE, D. C., M.B., Ch.B. Edin.; MARTIN, K. A. F., M.B., Ch.B. Edin.; BARLOW, P., M.B., Ch.B. Edin.; BUTLER, A. J. H., M.B., Ch.B. Edin.; WALKER, E. R. C., L.R.C.P. Edin.; ANDERSON, H. P., M.B., Ch.B. Edin.; WATSON, W. N. BOOG, M.B., Ch.B. Edin.; YOOLL, M. A. G., M.B., Ch.B. Edin., Resident House Physicians. MUNRO, H., M.B., Ch.B. Edin.; MCCLURE, J. H.; MORRISON, W., M.B., Ch.B. Edin.; EVERS, J., L.R.C.P. Edin.; CAMERON, D., M.B., Ch.B. Edin.; HETHERINGTON, W., M.B., Ch.B. Edin.; DINWIDDIE, J. L. N., M.B., Ch.B. Edin.; CAIRD, J. C., M.B., Ch.B. Edin.; KENNEDY, C. D., M.B., Ch.B. Edin.; ROBERTSON, I. M., M.B., Ch.B. Edin.; COWAN, J. M., M.B., Ch.B. Edin.; THWAITES, H. V., M.B., Ch.B. Edin.; WILSON W. L., M.B., Ch.B. Edin., Resident House Surgeons.

Vacancies.

For further information refer to the advertisement columns.
Bath Royal United Hospital.—Asst. H.S. £150.
Blackpool, Victoria Hospital.—Asst. H.S.
Bolton Education Committee.—Ophth. S. 3 guineas per session.
Bootle Borough Hospital.—Jun. Res. M.O. £125.
Bristol General Hospital.—Two H.P.'s., H.S., &c. Each £125.
Cambridge, Addenbrooke's Hospital.—H.S. £130.
Charing Cross Hospital Medical School.—Chemist to Bio-chemical Dept. £500.
City of London Hospital for Diseases of the Heart, Victoria Park, E.—H.P. £125.
Dundee Royal Infirmary.—Hon. Asst. Vist. Phys.
Eastern Dispensary, Leman-street, E.—P.
Hereford County and City Mental Hospital.—Second Asst. M.O. £350.
Hospital for Sick Children, Great Ormond-street, W.C.—Med. Reg. and Pathologist. £300.
Islington Dispensary, 303, Upper-street, N.—Sen. and Asst. R.M.O.'s. £300 and £220 respectively.
Leeds Public Dispensary.—Sen. Res. M.O. £200.
Lincoln County Hospital.—Jun. H.S. £150.
Liverpool Eye and Ear Infirmary.—H.S. £100.
London County Mental Hospital Service.—Seventh Asst. M.O. £432.
London Jewish Hospital, Stepney Green, E.—Res. M.O. and Jun. Res. M.O. £150 and £100 respectively.
Nottingham General Dispensary.—Two Res. Surgs. Each £250.
Prince of Wales's General Hospital, Tottenham, N.—Hon. Asst. S. to Ear, Nose, and Throat Dept.
St. George's Hospital Convalescent Branch, Copse Hill, Wimbledon.—R.M.O. £300.
St. Mary's Hospital, Paddington.—Two Bacteriologists. £400.
St. Mary's Hospital for Women and Children, Plaistow, E.—Asst. Res. M.O. £130.
St. Peter's Hospital, Henrietta-street, W.C.—Asst. S.
Salisbury Municipality, Rhodesia.—M.O.H. £600.
Sheffield Royal Infirmary.—Ophth. H.S. £100. H.P. £100.
Southampton County Borough.—Second School Dentist. £450.
Torquay, Torbay Hospital.—H.S. £200.
West London Hospital, [Hammersmith-road, W.—Hon. Asst. S. to Throat, Nose and Ear Dept.

Births, Marriages, and Deaths.

BIRTHS.

BOYS.—On Oct. 19th, at Brookside, Woodhall Spa, the wife of Leonard Boys, M.B., of a son.
JOBSON.—On Oct. 20th, at The Cottage, Kingsdown, near Deal, the wife of J. Stanley Jobson, M.B., F.R.C.S., of Weymouth-street, W., of a son.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

PRESENTATION TO A MEDICAL MAN.—On the evening of Oct. 20th, a large gathering of members of the medical profession and a few friends assembled at dinner at the Royal Albion Hotel, Brighton, to bid an official farewell to Dr. Edmund Hobhouse, who recently gave up his residence at Hove on his appointment as a member of the Lord Chancellor's Pensions Appeals Tribunal. Dr. W. Broadbent presided and Dr. L. A. Parry presented an address. Dr. Henry Gervis proposed "The Health of Dr. Hobhouse," and was supported by Dr. Sanderson. Dr. Hobhouse, in response, said that he should look back on his time in Brighton with great happiness. The profession in Brighton was a very contented one, and this was largely due to the goodwill of its members and the fact that the two bodies in Brighton—the British Medical Association and the Medico-Chirurgical Society—had always been in harmony one with another.

Notes, Comments, and Abstracts.

THE POSITION OF THE NATIONAL INSURANCE COMMITTEES.

Summary of the Presidential Address delivered to the Annual Meeting of the National Association of Insurance Committees on Oct. 19th, 1923.

BY SIR WILLIAM GLYN-JONES.

Sir William Glyn-Jones invited the delegates to consider how far after 12 years' working the promises of the Insurance Act had materialised in fulfilment, and particularly whether insurance committees were performing the functions allotted to them by Parliament, and whether the duties at present performed by the insurance committees justify their continuance. In so far as the Insurance Acts provided direct personal and individual benefits such as medical treatment, maternity benefit, and sick pay, he asserted that the contracts had been in the main fulfilled. Insured patients were better served and doctors better paid than they were, and though neither should be fully satisfied, the improvement in service and pay as compared with the situation prior to 1911 would in itself justify the Insurance Act. In 1922 insured persons were paid over 8 million pounds in sickness benefit, and more than 3¼ million pounds in disablement benefit; whilst it is estimated that over 6 million persons received medical treatment, involving 44 million attendances. Maternity benefit had proved an undoubted boon. Sanatorium benefit was no longer a part of the scheme, but the special provisions relating to tuberculosis, incomplete as they were, enabled a substantial advance to be made in the prevention and treatment of that great scourge.

Successful Working of the Act.

Sir George Newman, chief medical officer of health of the Ministry of Health, had reported that "great gains have been made in the health of the nation, and the death-rate is declining." To the working of the Insurance Act must be attributed a due share of the credit. Whilst insurance committees had played a great part in the work thus accomplished, they had not been given the responsibilities nor exercised the powers even in those matters which Parliament in the Insurance Act entrusted to them. The Act gave to insurance committees the administration of medical benefit, and of all additional benefits of the nature of medical benefit. They had to make arrangements with medical practitioners, and bargain with the approved societies having members in their areas as to the amount to be paid in respect of medical benefit and its cost of administration. All these negotiations had been conducted by the Ministry: insurance committees and societies were told what the arrangements made were and had to abide by them. It was admitted that collective national bargaining in these cases was inevitable, but the fact remained that the powers Parliament entrusted to committees were not and never had been performed by them. The conditions under which sanatorium benefit was for a time administered by insurance committees were always extremely unsatisfactory, necessarily so at the commencement of such a scheme. In spite of the limitation imposed by regulations, by want of funds, and the clashing of their powers and duties with those possessed by other local authorities, these committees performed a great work, which involved substantial responsibility for policy, and gave to the members scope for real capacity as administrators. The confusion and anomalies for which the committees were not responsible led to an amendment of the Act, and sanatorium benefit had ceased to exist. Since May, 1921, the administration of sanatorium benefit had not been a duty of insurance committees.

The temporary scheme for the administration of the benefits for deposit contributors was to last until January, 1915, a date now extended to December, 1924. No one was satisfied with this part of the scheme, and insurance committees were not proud of what they do or could not do for deposit contributors. Certain additional benefits of the nature of medical benefit (dental and optical treatment, hospital or convalescent home treatment, provision of appliances) had been provided for a portion of the insured persons. The popularity of these additional benefits had led to several suggestions for extension to include massage, radiant heat and electrical treatment, specialist treatment generally, brine baths, and laboratory facilities. The benefits provided had been administered by approved societies notwithstanding that the Act imposed the duty upon insurance committees. No additional benefits had been administered by insurance committees.

Powers Vested in the Insurance Committees.

The President then went on to emphasise the fact that the Government in promoting the National Insurance Bill of 1911 urged in its favour not only its insurance features and the provision made for the treatment of disease, but emphasised the provisions in the Bill for reducing sickness and disablement by removing their preventable causes.

An authority had made the following remarks immediately after the Act was passed:

"The National Insurance Act will compel public attention in a manner not previously realised to the cost of the nation, not only in human lives, but in money, of bad housing, wretched conditions of employment, defective water-supply, and the like. . . . Local authorities are at times slow to effect improvements, which frequently mean a large expenditure of public money, often in an area which has already borrowed largely for municipal undertakings. But that this remissness has an appalling effect on the sick-rate of the inhabitants cannot be denied. There has accordingly been inserted in the Act a section (Sec. 63) empowering Approved Societies and Insurance Committees to demand inquiries into the causes of excessive sickness in the areas for which they are administering the Act."

Mr. Lloyd George, in the Second Reading debate (May 4th, 1911) said:

"There will be a further power. If a county health committee are anxious to spend more money than they have funds at their disposal upon either the medical side or the sanatoria side, the county councils have power to agree to sanction further expenditure, provided the Treasury also agree. One-half the additional expenditure will come out of the rates, and the other half out of the Treasury. There are one or two other functions, to which I attach great importance, which the county health committees will have to discharge. They will have to consider generally the needs of the county and borough with regard to all questions of public health, and to make such reports and recommendations in regard thereto as they may deem fit. I shall point out later on that they have power beyond that of merely making reports and recommendations. . . . They will have power also to make provision for the giving of lectures and the publication of information on questions relating to health. . . . What we propose is that the county health committees shall have power to go to the Local Government Board whenever there is excessive sickness coming on the funds of the society, and apply for an inquiry into the cause of that sickness. Wherever the Commissioners of the Local Government Board find that it is due to neglect by the authority to discharge functions imposed by an Act of Parliament for the housing of the people, or for improved sanitation, they shall have the power of imposing that excess, not on the societies, who are not at fault, but upon the local authorities who are at fault. That will be a much more effective check than the old obsolete form of mandamus."

Lord Haldane, as spokesman for the Government in the Second Reading debate in the Lords, said:

"We hope to get a committee that will settle the multitude of questions which will arise and which will vary from locality to locality, questions with which the Insurance Commissioners could not themselves adequately deal. The functions of the local insurance committees will be to report on health. That is the great thing. They will furnish statistics not only about abnormal but about normal conditions, such as we do not possess at the present time, and this ought to be of great value in combating disease."

Great promises were thus held out of the improvement in the health of the community to result from the passing of the Bill.

The executive of the association had expressed the opinion that whatever might be said about the working of this scheme in the direction of insurance and treatment, the other promises had not been fulfilled. Again, referring to the special health powers of the local committees, Mr. Lloyd George in the Committee stage said:

"There is no proposal here to interfere with local authorities in any way, except that which is already enshrined, or, I think, embalmed is a better word, in Acts of Parliament, because most of them are mummies. They are not exercised, there is no life in them; they are pure dust, and they only have the form and features of life. There is none of the spirit and the soul in any of these powers. That is the reason why we propose that we should have some powers of this kind, in order not to interfere with local authorities, but I accept the word of the hon. Member (Mr. Harwood) to wind them up."

Sir William Glyn-Jones went on to say that he agreed that these words fairly described in 1911 the existing powers to which Mr. Lloyd George referred, but now, in 1923, the words equally applied, after 12 years, to the new powers and duties which as the result of that advocacy were conferred upon insurance committees by the Insurance Act. Whilst imputing neither motive nor intention, he asserted that insurance committees could be in no worse position had it been the deliberate policy to blanket them and by regulation to deprive them of all the power and responsibility given them by the Statute, and to leave them with such a modicum of routine duties as to justify their being put to as peaceful and painless an end as possible.

In conclusion, Sir William Glyn-Jones said: "I make all allowance for the war and its aftermath. Of course, the

war inevitably gave to our work a great set-back, and it is a pity that the recuperative powers of social reform are not equal to those apparently possessed by football, racing, boxing, motoring, and other doubtless innocent but less profitable objects of expenditure of thought, time, and money, which appear to have regained their pre-war prosperity. That fact notwithstanding, we cannot be accused of unreasonable impatience if, five years after the Armistice, we ask the Government if and when insurance committees are to perform the duties for which they were created. The present position of insurance committees is one in which they cannot with self-respect continue. Does the Government think the work outlined for us should be abandoned, or that we are not the bodies to perform it? In either case let us and the country know. We cannot with self-respect continue to be parties to a sham fight against the evils which we were enrolled with such a flourish of trumpets and beating of drum to combat." The outgoing executive committee had directed attention to this aspect of the work of insurance committees, and he asked the conference to give a mandate to the executive they had just appointed to force the issue.

THE SILENT MILK-CAN.

MUCH of city or town life is only rendered possible by the development of a degree of insensitiveness to the uproar of civilisation about us. Even so, there remain individual sounds which never fail to torture some more sensitive ear. Schopenhauer, if we remember rightly, was infuriated by the cracking of cabmen's whips, and had not Carlyle a sound-proof study? At the present time many of those whose windows overlook crowded London thoroughfares must sometimes wish that a certain street vendor was, in the words of his own reiterated stave, "far, far away." And there must be a considerable daily aggregate of nervous irritation engendered in station hotels, waiting-rooms, and similar places, by the bump and clatter of milk-cans rolled along echoing platforms and hurled into or out of trains. To mitigate this last-named nuisance has been the aim of Mr. Arthur S. F. Robinson, of Barsham, Beccles. By means of rubber tyres set round the heads and bases, and rubber covers upon the handles, of milk-cans—or, as they are now commonly called, milk-churns—he has rendered the movement of these receptacles practically silent. Mr. Robinson has patented a new form of sealed churn, lighter than the type usually seen and heard, slightly shorter—since "splashing space" is not required—and fitted with silencing rubber. This churn will, it is claimed, benefit traders, railway companies, and the general public by eliminating not only the porter's nerve-shattering "tintamarre," but also the wastage of milk in transit, and the contamination which must take place when the lids of churns are not hermetically sealed.

A WARNING.

To the Editor of THE LANCET.

SIR,—A young man going under the name of Joyce or MacNamee is calling on Irish doctors, clergy, and laity in the Midlands to dispose of a book by S. MacManus, "The Story of the Irish Race." He gives a receipt for £1 2*s*., but the book does not arrive. He has, I understand, no connexion with the O'Molloy Publishing Co., Donegal, who market this book, and is at present in the Nottingham district.

I am, Sir, yours faithfully,

Nottingham. M. J. HORGAN, M.B.

MADEIRA, THE CANARY ISLANDS, AND THE AZORES.[1]

THE twelfth edition of Mr. A. Samler Brown's standard guide to Madeira, the Canary Islands, and the Azores contains 496 pages packed with information ranging from legends of lost Atlantis to the proper prices to pay for hiring a mule and the way to estimate the distance of the horizon. The medical interest of the volume is underlined by a Chapter for Invalids, which contains valuable advice to those who seek to regain their health in these resorts. Invalids in an advanced stage of illness are cautioned against visiting the islands alone, or are advised to place themselves under close medical supervision, since they "are too apt to imagine that the mere change of climate permits them to take liberties with their strength and stomach such as they would never dream of in Europe. Elated and excited by the charm of a nearly constant sunshine and of a temperature which permits them to be out at almost any hour of the day, they . . . presume on the increase of vigour common after a sea voyage, and, acting in an imprudent manner, frequently so accelerate the ravages of the disease from which they suffer, that they never recover, being subsequently cited as examples of the insalubrity or inefficiency of the climate." The variety of choice of climate and elevation in the different islands renders care necessary in the placing of a patient, otherwise, of course, this variety is a great addition to the value of the resorts. The chapter closes with notes on climatic diarrhœa and sea-sickness.

The guide contains new matter which includes meteorological statistics compiled at an elevation of 7000 to 7500 feet above sea-level, in the Cañadas (the crater valley lying around the Peak) of Teneriffe, where it is proposed to build a sanatorium above the Summer Trade Wind Zone. The volume is excellently illustrated with views and maps, and there are many statistical tables.

[1] Brown's Madeira, Canary Islands, and Azores. Twelfth edition, 1922. London: Simpkin, Marshall, Hamilton, Kent, and Co., Ltd. 7*s*. 6*d*.

THE "PRANA" CARBON-DIOXIDE SNOW APPARATUS.

Sparklets Limited, Upper Edmonton, London, N. 18, have submitted for our inspection and trial a portable and satisfactory apparatus for making carbon snow pencils. It consists of a perforated metal cylinder about 3 inches long by 2 inches in diameter, to one end of which is affixed a vulcanite cone terminating in a tube closed at the end with a screw-cap. The other end of the cylinder is connected with a tube containing CO_2 under pressure. By means of a valve the CO_2 is allowed to flow into the cylinder at short intervals, and the snow formed in the cylinder is afterwards compressed in the exit tube by means of a vulcanite rod. The cap is then removed and the CO_2 pencil pushed through. The moulding tubes are made with both round and square sections. With a little practice the apparatus is easy to manipulate. The price is 3½ guineas, and the cost of refilling the CO_2 container is 2*s*. Other sizes are made for use in hospitals and surgeries.

NON-REGISTRABLE MEDICAL DEGREES ON PANEL LISTS.

To the Editor of THE LANCET.

SIR,—For the last nine years the degrees of British and colonial graduates holding foreign degrees have appeared in all the printed lists of practitioners who have consented to carry out the duties of the National Health Insurance. However, in March, 1923, without any notice, all these degrees were removed from the lists, because they were not at present on the Medical Register. As the general public attach great importance to an M.D. degree, this action of the Ministry of Health and of the London Insurance Committee has caused a great loss to these practitioners, by reason of the fact that any additional mark of academic distinction is duly taken into consideration by insured patients of all classes in choosing a doctor. In thus depriving these graduates of a necessary advertisement, someone connected with the Ministry of Health has been responsible for an exhibition of professional prejudice which may have far-reaching consequences. With regard to the graduates of the University of Brussels, we are now about 1000 strong in all parts of the British Empire, and I shall therefore be glad to hear from any graduate of this, or any other foreign university, with a view to combined action.

I am, Sir, yours faithfully,

ARTHUR HAYDON, M.D.,
Hon. Secretary, The Brussels Medical Graduates' Association.

41, Buckland-crescent, N.W. 3.

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